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# INDIA RUBBER WORLD

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**WHEN TO BUY RUBBER.**

SO far as we can learn, there is no dearth of raw rubber in the storerooms of the larger manufacturers. This can only mean that liberal purchases were made at prices which, at this writing, must be described as very high. Despite a constantly receding market, for several months past, the continual complaint of sellers of rubber has been that the trade will not buy. Did anybody ever see the trade fail to buy when it needed rubber? The highest prices ever reached in the market did not put an end to buying when rubber was needed in the industry.

The truth is that when rubber began to sag a few months ago from the exceptionally high prices which had prevailed so long there was a general activity on the part of buyers for consumption, with the result that the arrival of the lowest prices for three years past has not stimulated any greater activity. Manufacturers cannot afford to buy rubber at 25 cents a pound when they don't really need it. There have been heavier arrivals in the market during the past season than any one could have foreseen, either sellers or buyers, with the result that before the climax was reached most large manufacturers had their storerooms filled to unusual repletion. It may be that some of them wish they had waited for rubber at \$100 or \$200 a ton less, but so long as the industry is active the cost of the raw material is not the first consideration.

The main consideration at this time, we take it, is that

manufacturers should not rush to lower the prices of their products. As experience has shown them for so many years, the moment that an increased activity in buying manifests itself, in whatever rubber market, prices of raw rubber are bound to start to rise again, and a rise is usually more rapid than a fall in raw rubber. Besides, this is a period between seasons, and a heavy production in one year is not necessarily followed by a heavy crop in the next year.

All of which leads up to the question of what is the best time to buy rubber, on a rising or a falling market? We cannot avoid the belief that the time to buy rubber is when the conditions of the trade point to its need, regardless of its price at the moment. The pursuance of any other course is a policy of speculation, and this is not consistent with the best interests of manufacturing.

**ON MAKING BETTER TIRES.**

SO long as automobile tires hold air they will leak air, and it is in the nature of things that they will avail themselves of every chance. One may hold the inventor in high or low regard, as one may elect; the patent office undoubtedly does reveal many evidences of what, to the established worker in the world, are mental aberrations. But what was Charles Goodyear, the discoverer of vulcanization, measured by this standard? And is it forgotten with what scorn Vanderbilt, the railroad king, repulsed young Westinghouse for presuming to stop railway trains "with wind"?

The pneumatic tire, as now developed to its utmost, is better than anything else known to man for equipping automobile wheels. But the weekly grind of the patent offices at Washington and London and Paris and Berlin is not to be laughed at, nevertheless. Those institutions have registered in the past the notable inventions that measure what we call civilization, as compared with the usages of life when there were no patent offices. Every patent office gazette nowadays is burdened with the efforts of patient inventors to bring forth something in the way of a bandage for a swift running wheel that shall afford a maximum of resilience, while assuring a minimum of danger to the traveler.

We welcome with pleasure the concerted action of automobile manufacturers in America and France to arrive at the best sizes of pneumatic tires, as they now are, for the automobiles as the public now demands them. For what does A, or B, or C care who makes his tires, or how he makes them, so long as they render a service, for which he cheerfully pays whatever is charged? He asks simply that the tires will take him out, and home again, without accident.

Let the automobile associations go further, and strive to learn to what extent the automobile tire can be improved. A mere discussion of sizes means to determine what is best of the present attainment. And what is more, let Michelin and Goodrich and the Continental and

Dunlop join hands with the automobile societies and even strive to take the lead in seeking to develop tires which shall embody all the virtues which the patent offices of the world now show inventors to be attempting to bring into being.

#### MEXICO AND CEYLON.

THOSE of our friends who of late have been instituting comparisons between rubber planting conditions in Mexico and Ceylon may form mistaken conclusions if they fail to consider certain facts involved. We do not refer here so much to the different species under cultivation on the two sides of the globe, or to the different products to be derived, as to certain other general conditions, which are much more clearly understood now than at an earlier date.

The first rubber plantations in Ceylon were developed as a side issue on tea or cacao estates, each on a small scale, in connection with firmly established profit paying businesses. If the rubber should fail no great loss was incurred; the tea profits would continue. When the initial rubber propositions did prove successful, and practically all the tea planters concluded to go in for the new crop, the same policy was pursued; the tea or other crops are being relied upon to pay dividends until the rubber becomes productive. In many cases the rubber is expected to prove only an additional dividend paying crop, and the planting has been done, on many estates, practically without cost, from the reserve funds of well-established companies.

What has been the case in Mexico? American investors, far removed from the sphere of action, unacquainted with the tropics in any respect, have purchased government forest lands in advance of the opening of railways; their managers, who have required time to become acclimated, to learn the laws and customs and language of a foreign country, and to realize that planting there is different from what they have been accustomed to many hundreds of miles to the north—these men have undertaken to fell thousands of acres of primitive forests, to create new centers of population, to teach systematic industry to peons constitutionally ignorant of it, and to create plantations without hope of return until the rubber shall come into bearing. Could there be a wider difference than from the conditions under which rubber planting was introduced in Ceylon?

We do not refer to the matter now by way of discouragement. But the difference should be kept in mind when results are compared. The shareholders in a Ceylon tea company whose rubber may have cost them nothing to date are elated at the sale of their first 1,000 pounds of rubber, as the earnest of 1,000,000 pounds per year at some time in the future—all "velvet." The Mexican company whose first 1,000 pounds of experimental rubber comes out have only that to show after the expenditure of \$1,000,000, let us say, and years of waiting, without

dividends from any source meanwhile. Is it any wonder that the Mexican growers should feel less enthusiastic?

But, after all, the main difference is that the Ceylon planters, as a rule, have had dividends all the while, and those in Mexico have not. So far as enterprise, the disposition to take risks, is concerned, the comparison favors the planters on this side of the ocean every time. And the fact that the original investors still hold their properties, whereas most of those in the Far East have sold out, is still in favor of the Americans.

We have only a word to add—that the rubber planters in Mexico cannot too soon take a lesson from the planters in Ceylon and the Malay States and form an association for their mutual advantage in further systematizing the management of their estates, particularly now that the period of harvesting is approaching and is likely to find some of them unprepared.

#### RUBBER FACTORY AND RUBBER FARM.

THE establishment of a rubber tire factory at Singapore means a great deal more than some people may think. When Charles Macintosh and Charles Goodyear and Thomas Hancock were born there was no Singapore—at least not to the knowledge of English speaking people. To-day it ranks among the great shipping ports of the world and all owing to English influences. All of which had nothing to do with rubber until there suddenly grew up within quick touch of that port the systematic culture of rubber—of Pará rubber, be it noted—on a scale which already affects the markets of New York and London.

The first rubber factory at Singapore is not on a large scale; one thing that counts is that it is promoted by a Dutch concern long interested in investments in the Far East, and it is no secret that the Dutch as a class have proved safe and sane investors. At the present rate of development Singapore will ere long be second as a rubber exporting port only to Pará, and all due to the growth of rubber on plantations under English and Dutch enterprise.

What has prompted these remarks is the assertion of the leading financial paper of London that the Singapore manufacturing enterprise will not amount to much until it owns a rubber plantation which will enable it to procure its raw material at an advantage as compared with the general market. This is precisely what we expect to see; if not the initial Singapore shop, at least other factories in the same part of the world that will grow their own rubber, just as a lead pencil factory company near the offices of THE INDIA RUBBER WORLD mine their own graphite and cut their own cedar.

The progress of countless industries in America has followed the inclusion in the program of great companies of the control of the raw materials used. We should not care to invest in the shares of a Singapore rubber

factory so long as it paid \$1.25 for rubber; if it produced the raw material at 25 cents it would be different.

Ultimately it will be in the natural order of things for a French or an English or an American rubber factory to produce its own rubber, just as it is to-day for one of these factories to make the cartons in which its products are packed for the market. So long as the raw material was drawn from the Amazon or from West Africa such a plan might have been impracticable, but that was before the days of systematic rubber production.

#### THE QUESTION OF COMPOUNDS.

EVERYBODY must know by this time that rubber goods are not made of rubber alone. Even the common garden automobilist understands that his high priced tires contain some kind of fabric, in connection with the rubber, to give strength to the pneumatic bandage of his wheels. And it is not so many years, measured by the average lifetime, that rubber belting and such like goods were advertised as "combination" goods, having reference to the cotton fiber which was embraced in order to provide the necessary element of strength. All of which prepares the public mind for the idea that rubber goods of whatever sort are "compounded"—whether with vegetable fibers, to add strength, or with mineral matters, to give the rubber, as in a tire tread, greater wearing capacity, and so on.

But what we now have in mind is not so much what the public have in mind—the public that in the end pass upon the whole question in hand, since the public ultimately pay the bills—but the question more intimately connected with the rubber factory itself. So many volumes of this or that rubber, as it comes from the crude rubber seller, and so many of the chemicals or drugs, whatever they may be called by the compounder, will produce, according to the rules of the trade, certain results. The question is whether the difference in the results justified the great number of different compounds or mixtures now shown on the books of many manufacturing concerns.

An order for a certain quantity of certain goods at a certain price calls, automatically, as things are now arranged, for a certain "mixture" of raw materials, which may be well enough if the run on this particular compound is to be long continued. But this is not always the case. May it not happen that, everything considered, the change from a high grade rubber to a lower grade to fill a particular order, if the total sum involved is not great, will mean more in costs than to keep the original compound in hand?

The tendency undoubtedly in America is to follow the European practice of producing a great variety of rubber goods under one management, and without any idea of inviting any comparison between American and foreign methods, we may suggest the propriety of considering whether it is necessary, every time a new order is booked, that a new requisition should be made upon the com-

pound room. When an "African" rubber meant, in the usual order of things, an unspeakable material worth only one-fourth or one-third the price of the lowest grade Pará, there may have been reason for the utmost care that Pará and African rubbers be kept apart in the compound rooms. But to-day science has taught us that, within definable limits, rubber is rubber, and it is not so much the origin of the raw material as the intelligence and skill and honesty of the fabricator that counts, whether rubber from one part of the world or another is used. Without mentioning countries, we do know of manufacturers who have made fortunes through the use of a particular grade of raw rubber before its merits became generally known, simply through recognizing the value of a gum for its own sake, instead of measuring it by the reputation attaching generally to a rubber from a given quarter.

What we are leading up to is the idea of accepting rubbers by their merits, whether from America or Africa or Asia, without reference to what may have been the experience of a given factory with particular rubbers in the past, and ceasing to try to attract trade by the use of such old catch words as "Pará" and the like.

Let the established rubber manufacturer stand upon his reputation for supplying goods of a quality that he can guarantee. What more has he ever done? The public is not concerned about the source of the raw material. To the public Pará means no more than Loporí, or Ikelemba or Ceylon. And as for newly started companies, they can do no more than in the past—offer goods that will compare favorably with the older concerns in the trade. If they make good their claims they will succeed; if not they will soon drop out of the game.

THE PROLONGED WINTER THAT CHEERED the rubber footwear trade may be remembered later with less pleasure if, as now seems probable, its effect should be seen in a reduced cotton crop and correspondingly higher prices next season for the cotton fabrics without which no rubber shoe is complete.

THE PRICES OF RUBBER SCRAP SHOW no tendency to decline in keeping with the fall in the crude rubber market, which is renewed confirmation of the theory that the two classes of rubber are largely independent of each other. It would appear that, with a larger productive capacity than ever before, the rubber reclaimers are behindhand in the matter of filling orders for their products, in view of which fact it is natural that waste rubber is not going begging for buyers.

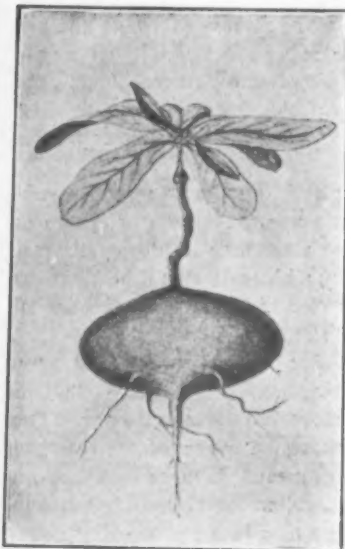
CYCLING IS NOT DEAD by a great deal, but only experienced a case of "suspended animation." The mere fact that important rubber factories are putting out bicycle tire catalogues again, after having stopped their issue for a few years, is evidence of returning activity in the trade.

THE NEW TARIFF ARRANGEMENT WITH GERMANY will specifically affect the rubber trade; at least various items of rubber goods appear in the lists under consideration between Washington and Berlin. We have no time or space here to analyze the new customs schedules, but on the theory that history repeats itself, it is safe to count on our German friends in rubber selling us as much as usual, if not more, regardless of tariff regulations.



### RUBBER FROM A TUBER AT LAST.

A PLANT found in Portuguese West Africa, and not hitherto known to science as a source of rubber, is the subject of a recent report by Professor Carlos Eugenio de Mello Geraldes, of the agronomical institute at Lisbon. The plant is referred to as flourishing in the sandy, treeless plateaus around Bailundo and Bihé, inland from the seaport of Benguela, and lying particularly between the Kwanza and Zambesi rivers. This region was described in *THE INDIA RUBBER WORLD* May 1, 1903 (page 26) as the source of large quantities of "root rubber," which grade has been exported extensively from Benguela,



THE "EKANDA" PLANT.

[A newly discovered rubber producer in Portuguese West Africa.]

though the plant now described has no relation to those producing the class of rubber here referred to. It is ascribed by Professor J. Henriques, of Coimbra, to the natural order *Asclepiadaceae*, while the *Landolphia Thollonii* and other "root rubber" species belong to the *Apocynaceae*.

The new plant, known by the natives in different localities as "ekanda" and "marianga," is a stemless biennial plant, with a fleshy yellow tuberous root, sometimes turnip shaped, but most frequently in form resembling a flattened sphere, the entire substance of which is permeated with lactiferous ducts. The plant ends at the top in a simple or bifurcated prolongation or pseudo stem, 2 to 4 inches in length. The leaves are dark green, in two to five pairs, forming a rosette near the earth; they are simple, oval shaped, with a small point, and slightly hairy. The feather-like veins are light green in the young leaf, but turn violet red shortly before blossoming. The blossoms are five fold, small, violet red, and mostly sterile. In form they suggest a bunch of grapes, and are enclosed in a sheath prior to opening. The fruit is a spindle-shaped bag capsule, sometimes as long as four inches, and containing up to 50 seeds.

Rubber has been obtained from the "ekanda" tubers by various crude experimental processes, but chiefly by slicing them and applying pressure. The latex is referred to as coagulating with the application of alcohol, but not of alum. It has been suggested that by means of centrifugalization of the expressed juices a creamed latex could be obtained which would yield a purer rubber than has yet resulted from the experiments. Tubers two years old are referred as attaining a diameter of  $5\frac{1}{2}$  inches and a weight of 11-13 pounds, and a rubber yield of  $\frac{1}{2}$  per cent. of the total weight resulted from crude processes. Professor Geraldes, who regards the plant as adapted to cultivation, has figured out estimates of yield and profits, but these must be regarded as yet as hypothetical, and need not be repeated at this time. It may be mentioned, however, that he regards as possible a product of 200 kilograms of rubber per hectare [=188 pounds per acre] at the end of two years. But his estimate of the value of the rubber (about \$1.28 per pound) is clearly too high for the quality likely to be yielded from such a source.

The term "potato rubber," formerly sometimes used in the trade, did not, as some supposed, relate to rubber obtained from a sort of tuber, but to the appearance of the small balls in which certain rubbers came to market, particularly "almeidina," a cheap gum exported in small quantities from Portuguese West Africa, but having no relation whatever to the "ekanda" product.

### PROGRESS IN INSULATION.

#### HIGH TENSION EXPERIMENTS AT MILAN.

SOME high tension experiments of much interest were made at the Milan exposition on cables manufactured by Pirelli & Co. These experiments were made a number of times; among others, some before the electrical congress and once before the King of Italy. The cables tested were insulated with india-rubber. Though the company manufacture paper insulated cables largely, they believe that rubber insulation is necessary for very high tension work, for reasons demonstrated in the lecture by their electrical engineer, Mr. E. Jona, at the St. Louis Electrical Congress. The Pirelli firm have built a cable for working at a voltage of 100,000, and none of the lengths tested has broken down under 200,000 volts. There is no record of such high tensions having been reached previously. Mr. Jona has described these cable tests in *The Electrician* (London).

Mr. Jona describes also some stranded cables made by Messrs. Pirelli. The stranded conductor is sheathed in a lead tube and subsequently insulated by several layers of vulcanized rubber, up to a total thickness of 5.5 millimeters. Then follows a coating of 1.2 millimeters of gutta-percha, to insure absolute imperviousness to water. The core is then served with tarred jute and armored with 18 steel wires 3 millimeters in diameter. Three such cables were used in Italy to form a three phase line. In experiments made with such cable at Milan, designed for use on a 60,000-volt line, it was tested up to 160,000 volts.

#### HIGH VOLTAGE UNDERGROUND CABLES.

THERE seems to be a demand, says the *Electrical Review* (New York) for cables which can be used safely on a 44,000-volt system underground. At present the high tension apparatus of a city system is capable of operating at a considerably higher voltage than that employed, with the exception of the cables, and the *Review* is of the opinion that when cables for these higher pressures are demanded they will be forthcoming.

"If 44,000 volts be adopted for underground transmission lines, and it be found successful, it would not be surprising to have even higher voltages tried. Such a system is coming very close to the voltages now employed on the longest overhead transmission systems. These generally lie between 50,000 and 60,000, the latter figure as the upper limit, set, not by the weakness of the electrical apparatus, but because above this point the losses from the overhead wire increase rapidly. It is possible that some such limitation will be found for underground cables, yet if transformer windings operate satisfactorily at 80,000 volts or more the limiting consideration may be merely one of cost. The insulation thought to promise best for such cables is one consisting of cloth tape properly impregnated with some good compound. Rubber will hardly be used until some way of preventing the deleterious effect of high tension discharges has been devised. This is fortunate, in a way, since our rubber resources are already taxed to the utmost to supply the necessary quantity of material for insulating low potential wires."

Hot water bottles may be provided with an electric heating device, by means of which the water may be kept heated and at a constant even temperature as long as may be desired. This obviates the necessity of constantly refilling the bag with hot water. The electric heater may be attached to a water bottle stopper of the ordinary type, and connected by a short wire to an electric light socket. Such a device is the "Standard" water bottle heater sold by C. J. Bailey & Co., Boston.



## Rubber Tapping Tools, New and Old.

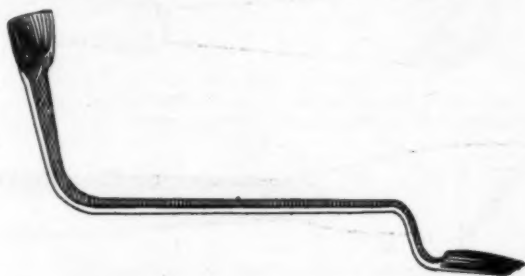
**A**LTHOUGH rubber milk has been drawn from trees and vines in many parts of the world for a very long time, it was not until rubber was planted on a large scale that the need for a practical and scientific tapping tool was appreciated. To the native expert in the use of "machete," "bolo," or "machadino," and working in the dense forest without supervision, no such need was apparent, and he did not care whether his cutting injured the trees or not. The study of the needs of planted rubber trees has brought out many types of cutting tools, and if one follows the progress made it will be seen that the simpler kinds are those that are surviving. Indeed, it is just as it is in any new business. Many freak inventions center about it and finally something simple, that it would seem should have suggested itself at first, will remain and the others drop out of sight.

So far the greatest progress in tools has been made in regions where the *Hevea* has been planted. Because they are successful

on that type of tree, however, does not for a minute prove that they will be best for the *Castilloa*, *Funtumia*, or *Ficus*. Indeed, already the progress of invention points toward radically different tools for making incisions in the *Castilloa* from those used for cutting the *Hevea*. Just what tools will be in use ten years from now on great plantations, it is premature at the least to say. That is for the planter to discover when he gets to tapping on a large scale. The ideal tool, however, is one that does not injure the tree, which gives the latex the best opportunity for flowing, which makes a cut that heals quickly, which is so simple that it needs little adjustment, so strong that it will neither bend nor break, and so thoroughly "fool proof" that the most stupid native can use it without coaching. It is believed that the following illustrations afford a fairly complete record of what has been done in the production of tapping tools for use on the various rubber-producing trees wherever rubber is prepared to an important extent.



A SOUTH AMERICAN RUBBER TAPPING KNIFE.



TOOLS FOR CUTTING "MANGABEIRA" RUBBER.  
[Used for wild rubber, in Brazil.]



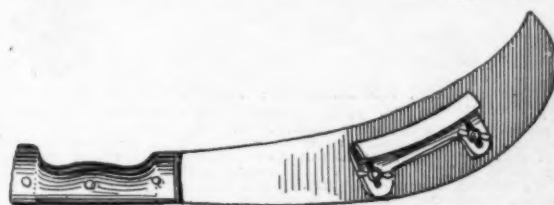
NATIVE "MACHADINO" (BRAZIL).  
[Used for wild *Hevea* rubber.]



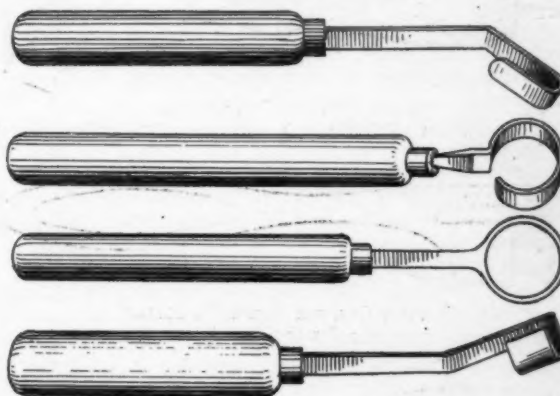
NATIVE "BOLO" (PHILIPPINES).  
[Used in extracting gutta-percha.]



THE "PARA" RUBBER TAPPING CHISEL (CEYLON).  
[For reopening the original incision so as to renew the flow of latex with the smallest loss of bark tissue.]



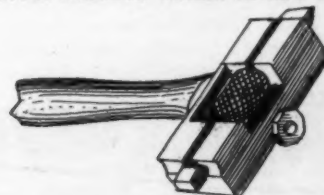
TOOL FOR "CASTILLOA."  
[Used by Elliott Durand on the the plantation "Cascajal," in Mexico.]



TOOLS FOR CUTTING CEARA RUBBER TREES.



A SOUTH AMERICAN RUBBER TAPPING KNIFE.



MACADAM-MILLER KNIFE.  
[For *Hevea*, in Ceylon. Two detachable paring surfaces connected by a screw roller.]



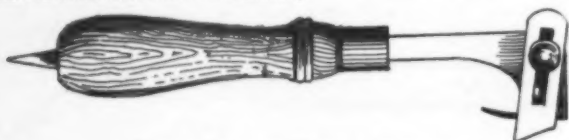
GOLLEDGE'S TAPPING KNIFE (CEYLON).

[For *Hevea*. Can be used in cutting from left to right and right to left from above downwards. Used to make the original incision and during subsequent paring operations.]



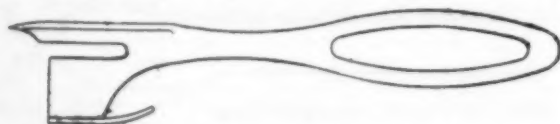
BOWMAN AND NORTHWAY KNIVES (CEYLON).

[For *Hevea*. Used in series of three. The first shown, at the top, is provided with a two-edged guide, which on pressing against the bark cuts the tissue and defines the area to be cut away by the knife behind it. It is used like a plane, the head being shaped to shave the bark gradually. The second knife is used for very thin parings, cutting off the lower edge of the grooves as originally made. The last knife, or pricker, with a spur-like arrangement, having a number of sharp cutting teeth, is used to cut the latex tubes near the cambium.]



DIXON'S TAPPING KNIFE (CEYLON).

[For *Hevea*. An open blade knife, adjustable to cut the bark at any depth. Base provided with a pricker for ascertaining bark thicknesses.]



TAPPING TOOL FOR "HEVEA" (CEYLON).

[Patented by the Colombo Commercial Co.]



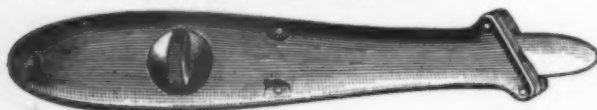
TAPPING TOOL FOR "HEVEA."

[Designed by E. Valentine Carey in the Federated Malay States.]



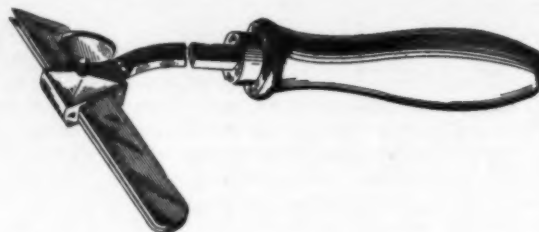
HOLLOWAY'S TAPPING TOOL (CEYLON).

[Used for *Hevea*, on the "Kepittigalla" estate.]



CHRISTY'S TAPPING TOOL.

[Made by Thomas Christy & Co., London. The extension of the blade is regulated by a screw in the handle.]



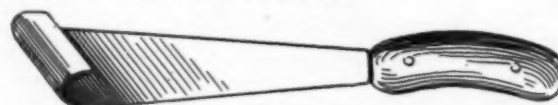
"V. D. K." KNIFE.

[Tapping tools for *Hevea*, patented by Gustav Van den Kerckhove, of Belgium.]



GORDON WALDRON'S TAPPING KNIFE.

[For planted *Castilloa*. Used in Nicaragua.]



RUBBER TAPPING TOOL IN GUATEMALA.

[Used for wild *Castilloa*. A sort of transformed saber.]



RUBBER TAPPING TOOL IN GUATEMALA.

[Used for *Castilloa*. Designed by Señor Asturias, of the Plantation "El Baul."]



TOOL FOR "CASTILLOA."

[Suggested by Dr. Carl Otto Weber for use in Colombia.]



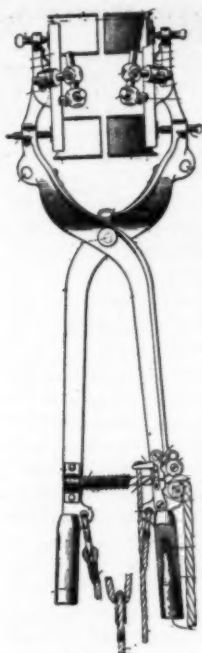
TOOL FOR "CASTILLOA."

[Used by C. A. Lesher on "La Zacualpa" plantation in Mexico. Consists of a loop of steel in a handle about 18 inches long, having inside it a long steel finger regulated by a thumb screw to determine the thickness of the cut to be made.]

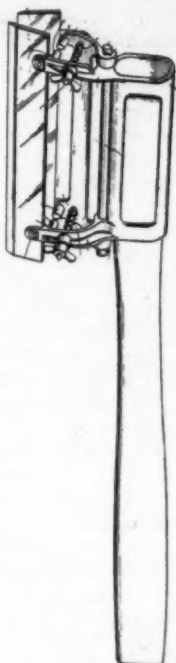


PRASTERINK'S GOUGE AND PAN (JAVA).

[Used on *Ficus*. The latex flows down the trough, through the aperture shown, into the collecting pan.]



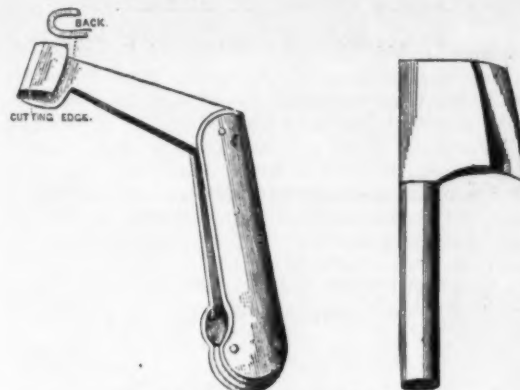
Robinson Patent.



Fish Patent.

## TAPPING TOOLS FOR "CASTILLOA."

[These are views of tools patented in the United States and used on Mexican plantations. The one on the left is the invention of F. S. Robinson, and the other that of W. E. Fish.]



COLLINS TAPPING TOOLS.

[Views from the "Report on the Caoutchouc of Commerce," by James Collins. London: 1872.]

## RUBBER PLANTING MISCELLANY.

A RESIDENT of British New Guinea is reported by the United States consul at Melbourne to have sold a quantity of rubber produced in that island at Sydney at \$1.04 per pound. Rubber trees as well as vines are found in New Guinea in abundance, which leads to the belief in Australia that this is to prove an important source of rubber.

The Seafeld Rubber Co., Limited, registered in London February 7, 1907, to acquire the Seafeld rubber estate in Klang, Selangor, for £64,000, of which £16,000 is in cash. Mr. H. K. Rutherford, of London, a part owner of the estate, is one of the first directors.

Pitakande Tea Co., of Ceylon, Limited.—The 1906 rubber crop was 1,049 pounds, against 820 pounds in the year previous. The company have 448 acres in rubber, including 20 acres planted in 1902. The rubber estimate for this year is 2,500 pounds. The company's tea trading afforded an 8 per cent. dividend for the past year.

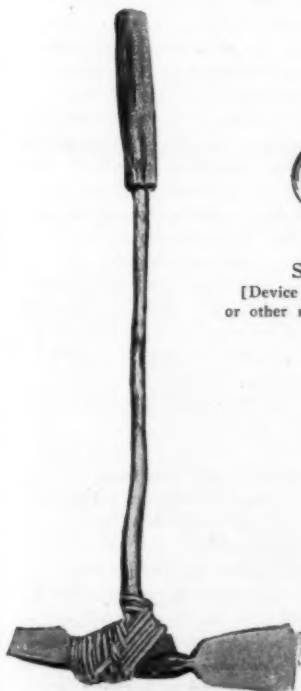
The Labu (F. M. S.) Rubber Co., Limited, registered in London February 9, 1907, to acquire the properties known as the Batang Labu estate in Negri Sembilan. The estate was owned in England, one of the owners, Colonel Hon. Charles Lambton, being one of the first directors. Registered office: 5, Whittington avenue, E. C., London.

Samples of plantation Cearà rubber, sent to London from Beira, in Portuguese East Africa, were reported by a leading firm of brokers, according to the *Rhodesian Agricultural Journal*, to be worth about 5s. 2d. [= \$1.25 2-3] to 5s. 6d. [= \$1.33 3/4] with hard fine Pará selling at 5s. 2d.

The number of rubber trees under cultivation in Ecuador is stated by a British consul at about 1,000,000, mostly not old enough to be productive. The trees are of the native *Castilloa* species. A law was passed in 1904 offering a bounty of 10 cents (silver) for each planted rubber tree at the age of 5 years, but the consul had heard of only one application for such bounty—for a plantation of 300,000 trees in the Tenguel district.

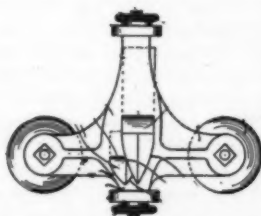
The Matala Planters' Association has proposed, and the government of Ceylon probably will be asked to adopt, a rubber ordinance, on similar lines to the existing ordinances relating to cacao and some other products. To-day a planter who complains of a theft of rubber, rubber plants, or rubber seeds, must identify his property in order to make a case. But under the cacao ordinance, for instance, a suspected person may be obliged to prove where he got the plants he has been accused of stealing.

The output of dry rubber from the Lanadron estate of the Messrs. Pears, in the Malay States, for April, amounted to 7,305 pounds.



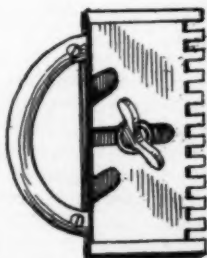
GUTTA-PERCHA CUTTING TOOL (MALAY PENINSULA).

[Primitive native device, "Bil-liong," for felling trees.]



SANBORN PATENT (U. S.).

[Device for grooving or tapping *Castilloa* or other rubber-yielding trees.]



MACADAM'S COMB PRICKER.

[For *Hevea*, in Ceylon. A flat steel blade or comb with a dozen sharp teeth on one side. The blade can be pushed outward or drawn inward.]

## BRAZIL'S EXPORT OF RUBBER.

THE figures herewith indicate the weight in kilograms of the exports of rubber from all the ports of Brazil, of rubber produced in that republic, during the past four calendar years. They have been compiled from the returns of the federal bureau of statistics of Brazil, and are in continuation of a similar table presented in THE INDIA RUBBER WORLD July 1, 1903 (page 343). We have had occasion before to refer to the high degree of efficiency to which the statistical office referred to has been developed under the administration of Mr. J. P. Wileman, and

## PARÁ RUBBER (INCLUDING CAUCHO).

PORTS.	1903.	1904.	1905.	1906.
Manáos .....	16,499,519	15,331,869	15,246,938	14,732,000
Pará .....	12,559,057	13,171,212	16,221,766	16,554,000
Corumbá .....	255,168	251,396	441,787	217,000
Itacoatiara .....		2,175	6,091	
Maranhão .....	199	13,410	82,646	
Ilha do Cajueiro...	1,972	18,344	71,296	
Porto Murtinho....	2,740	3,800	2,761	
Total .....	29,318,655	28,792,206	32,073,285	31,643,000

## CEARA RUBBER ("MANICOBÁ").

PORTS.	1903.	1904.	1905.	1906.
Ceará .....	517,824	668,809	589,218	715,000
Bahia .....	496,224	939,157	1,443,826	1,410,000
Ilha do Cajueiro...	632,858	503,871	557,530	505,000
Pará .....	950	2,430	350	
Maranhão .....	27,308	11,471		
Cabedello .....		1,923	8,527	
Pernambuco .....	41,333	97,556	82,666	
Maceió .....		180		
Rio de Janeiro....	5,397	680	100	
Total .....	1,721,894	2,226,077	2,682,217	2,664,000

## MANGABEIRA RUBBER.

PORTS...	1903.	1904.	1905.	1906.
Bahia .....	355,291	415,579	261,189	262,985
Rio de Janeiro....	43,457	85,195	105,413	129,044
Santos .....	62,588	128,991	95,190	88,535
Corumbá .....	37,893	56,383	74,733	81,722
Pará .....	1,806	541	2,805	
Maranhão .....	3,214	6,301	3,197	
Ilha do Cajueiro...	28,100	35,316	29,733	
Ceará .....	3,996	6,935	19,019	
Cabedello .....	15,354	22,803	11,742	
Pernambuco .....	97,849	85,034	30,314	
Maceió .....	11,543	10,420	3,294	
Porto Alegre .....		350		
Porto Murtinho....	400	1,300	480	
Total .....	661,581	855,208	637,109	653,239

Grand total..... 31,702,130 31,873,491 35,392,611 34,960,239

## BRAZILIAN RUBBER EXPORTS, BY PORTS.

	1903.	1904.	1905.	1906.
a Amazon ports....	29,061,422	28,508,227	31,477,950	31,296,000
b Atlantic ports....	2,344,507	3,042,385	3,394,900	3,361,517
c Interior ports....	296,201	312,879	519,761	302,722
Total .....	31,702,130	31,863,491	35,392,611	34,960,239

a Pará, Manáos, and Itacoatiara.

b On the Brazilian coast, from Cabedello south to Santos.

c Corumbá and Porto Murtinho, on the river Paraguay, discharging into the Rio de la Platte, and representing the shipments figuring as exports to Uruguay and Argentina.

## DESTINATION OF EXPORTS, 1906.

COUNTRIES.	Pará.	Manicoba.	Mangabeira.	Total.
United States.....	16,162,000	433,000	154,135	16,749,135
Great Britain.....	10,760,000	1,530,000	132,240	12,422,240
Germany .....	1,661,000	375,000	256,208	2,292,208
France .....	2,770,000	295,000		3,065,000
Uruguay .....			83,596	83,596
Other countries....	290,000	31,000	27,060	348,060
Total .....	31,643,000	2,664,000	653,239	34,960,239

the figures herewith may be regarded as representing very closely the totals of the rubber manifests from the different ports. Some of the statistics here included are not available from any other source.

It will be observed that these figures relate to shipments by calendar years, whereas the Pará and Manáos figures, presented elsewhere in this paper, relate to "crop years." Besides, the latter include the output from the whole Amazon region, whereas the figures on this page report the Brazilian output alone. This explanation is made in view of the fact that Mr. Wileman's latest advices show a slightly decreased total production, while the latest "crop year"—ending six months later, by the way—gives a large increase over any former year.

## THE RUBBER TAX AT PARÁ.

A NEW condition in the rubber trade at Pará has resulted in no little dissatisfaction among the exporters there. The *ad valorem* export duties on the various grades of rubber are calculated, not upon the value of each particular shipment, but upon an official valuation, which is revised weekly. Every Monday morning the various exporters report to the *Recebedoria* (the state tax receiving office) the different prices at which they effected purchases during the preceding week, being obliged to mention every purchase of 2 tons or more. The *Recebedoria* takes the average of the prices for fine rubber and declares it the same morning as the *pauta* (official price) for the current week. Similarly the *pauta* for coarse rubber and cacho is arrived at by taking the average of prices paid for those sorts. The taxing of rubber by the Pará authorities applies only to rubber produced in the state of Pará, though in fixing the *pauta*, account is taken of all sales at that port, regardless of the origin of the rubber. This system has long been in vogue, and in operation it has proved satisfactory.

Since the cession of the Acre region by Bolivia, it has been organized into the Federal district of the Acre, under the fiscal administration of the government at Rio. Rubber exported from that territory is taxed by the Federal government, the collection being made at Pará by *Alfandega*, a Federal office, independent of the local *Recebedoria*. The complaint that is made is in regard to the method of fixing the Federal *pauta*, or official price. In this case, the lower prices paid for "islands" (Pará state) rubber are not taken into account, which results in the Federal *pauta* being considerably higher. It is pointed out that it is unjust, under the circumstances, that the *pauta* for the Pará state product should be influenced by the prices for "upriver" rubber being included in the computation.

The difference between the two *pautas* is shown in a comparison of the official figures announced for the week beginning May 13 [values in reis per kilogram]:

	State.	Federal.
Fine rubber.....	5,950	6,325
Medium .....	5,950	6,025
Coarse .....	3,610	4,700
Cacho .....		3,700
Cacho sernamby.....		4,700

The *aviador* firms, by whom the rubber is brought to market, have made a protest to Rio de Janeiro respecting the way in which the Federal *pauta* is made up, to which at last accounts no reply had been received.

Manáos has a *pauta* fixed in the same way as that in the state of Pará, relating to fine and coarse rubber, cacho and cacho sernamby (Peruvian ball and sheet).

A RUBBER UNDER THE BAN.—A rubber called "gutta-jangka" is marketed at Sarawak, Borneo, adulterated with raw sago, clay, and other foreign matter. The government has just prohibited the practice, under the penalty of fines not exceeding \$100.—*Malay Mail*.



## Plantation Versus Amazon Rubber Prices.

IT is impossible to state with any definiteness the net cost of placing rubber in the ports of Brazil, according to Mr. Reginald W. Wickham, who recently visited the Amazon region, writing in *The Times of Ceylon*. "There is no such thing as an average cost," he says, "as no man working rubber on the Amazon has the vaguest idea what it does cost." The proprietor of a *seringal* (rubber camp) is a merchant who supplies the goods needed by the workers who gather the rubber; he credits each worker with approximately the market price of the rubber which he collects, minus a percentage to cover shipping costs and the like. "The profit is made in the supplying of goods to the workmen. Having the monopoly of supplying perhaps several hundred men with all they require—necessities, comforts, and luxuries—and the men being able to earn (on paper) £1 to £2 a day, and therefore being rich and extravagant, the merchant-proprietor is able to charge what he likes for the goods, and thus the profits of a rubber concern are shown as 'trading,' and not rubber. In fact, it is really a question of exchange and barter, the goods being exchanged at the owner's price, for rubber at somewhere near the market price at Manáos." Yet if the proprietor charges too much he is liable to lose his labor.

Mr. Wickham thinks that if the price of rubber should fall to any great extent, the Amazon region can never compete with the Far East. Manáos is to-day about the most expensive place in the world to live in. Goods cannot be supplied to the rubber workers cheaply enough to enable Brazilian rubber to compete with that from the East, when enough of the latter comes into the market to influence the price. "Meanwhile, the Amazon rubber is the bird in the hand, while Ceylon and Malay rubber is the bird in the bush."

The Amazon forest region is so large, says Mr. Wickham, that one man could hardly become qualified to make definite statements in regard to it, but he is certain that no population in North Brazil can ever work out the rubber on the Amazon and its tributaries. "The reason rubber men are going farther and farther away for their rubber is not so much that the nearer tracts are being worked out, as to get farther away from competition, and obtain better control of a monopoly in supplying goods. At times drastic measures have to be taken to keep out competition; on a river, just beyond where I was, three Jews, who were trying to buy direct from the workmen rubber that was already hypothecated to the proprietor, were simply shot. The only remark made was 'Serves them right; they had no right to be there.'"

Mr. Wickham is reported to have visited Brazil for the purpose of selecting rubber areas for investment by an English syndicate, and *The Times of Ceylon's* London correspondent hears that some prominent Ceylon people may become interested.

*The Times of Ceylon* regards Mr. Wickham's views as cautious. The editor does not think that Eastern rubber planters should stake their all on the idea that at 3 shillings [=about 75 cents, gold] they will cease to have to compete with wild rubber. "In the event of a heavy fall in rubber prices," says the *Times*, "of course the rubber forest proprietor's trading profits will fall heavily from their present position, and there will be a great many economies forced on all concerned. But the main source of the world's supply was where it is now in the days of rubber at 3s. 6d.; and while the rubber is there for the gathering, most of the collectors will continue their work down to no profit worth speaking of rather than turn to some other occupation, probably quite as arduous and with no greater promise. Naturally there will be less collected at 3s. than now, and this will

tend to raise prices again, when collectors will resume making money, having in the meantime learned a number of economies."

\* \* \*

THERE is no reason for alarm among the rubber producers of the Amazon region on account of whatever result may be attained from rubber culture in the Far East, according to Mr. Ashmore Russan, chairman of the Brazilian Rubber Trust, Limited (London). Mr. Russan has been interested in British companies exploiting rubber in South America for many years. "Brazilian collectors," he says, "are paid by piecework—so much a kilogram. As the piecework price paid to the collectors on the estates falls and rises with the market or exporters' price in Pará and Manáos, which in its turn is ruled by prices in Europe and the United States, the producer's profit, in the event of an unexpected fall, would be practically the same as when high prices ruled. The profit per kilogram would be about the same, but the cash turnover smaller."

Mr. Russan estimated the world's production at 70,000 tons a year, of which Brazil yields nearly 60 per cent.—all forest rubber. The output of plantation rubber does not exceed 1,000 tons, or about 1½ per cent. of the whole. So continuous is the growth of demand for rubber, Mr. Russan does not feel that when the yield of plantation rubber has reached 20,000 tons yearly the cost to manufacturers will be materially less than now. He considers that all the rubber available from whatever source for many years to come will be required.

It may be noticed that Mr. Russan's account of how the *seringal* proprietors deal with their labor differs somewhat from that of Mr. Wickham, but the rubber region is so vast that doubtless a wide range of practice exists.

\* \* \*

As having a bearing upon a proper comparison of Amazon forest and Ceylon plantation conditions, in affecting the cost of rubber production, the illustration accompanying this article may prove informing. It is from a photograph of a typical rubber station on the river Juruá, an affluent of the upper Amazon, which runs through what is considered one of the richest rubber producing areas in the whole Amazon region. Such a house as is shown in the photograph represents very fairly the kind of construction employed in the great majority of rubber stations on the upper Amazon. These houses, known as *barracões*, are used as a place of residence by the owner of the *seringal* (rubber camp) and his assistants, as well as a store house for supplies and deposit of rubber. The houses are built upon piles, so as to be out of reach of the water during the annual flood time, when the whole country is inundated and work suspended.

The group of *seringueiros* (rubber workers) is also typical. They are principally natives of Ceará and Maranhão, going up river each year to gather rubber, with a few Indians and half-breeds belonging to the locality. The men are shown with the various implements used in their work. The *seringueiros* do not live in the *barracão*, but construct rude huts in the forests near by, as convenient as possible to the *estradas* which they may be working. River steamers call periodically at such a station, to discharge supplies and take on rubber.

Such a rubber estate as the illustration relates to is not only located at the edge of a primitive tropical forest, with its rubber trees scattered at a rate of only a few to the acre at best, but it is subject to floods, and the workers, mostly unacclimated, to the deadly fevers and the ill effects of insufficient or improper food. The Juruá river itself is nearly 2,000 miles from the seaboard, with practically only one civilized center (the city of Manáos) between it and the ocean. Communication is infrequent and



TYPICAL RUBBER BARRACKS ON THE RIVER JURUA, IN BRAZIL.

irregular. Under such circumstances the rubber working forces increase slowly, and what would be considered cheap labor in any other country cannot exist. Ultimately, no doubt, better conditions may exist, with more effective labor, and more economical production of rubber, but progress in this region is so slow as to be hardly perceptible.

In strong contrast with these conditions is the situation in Ceylon, for example, where systematic cultural operations, based upon long experience in tea estate management, render the production of rubber something to be planned as carefully and the cost and profits to be calculated as exactly as any business undertaking in any part of the world.

#### CAMPHOR TO BE CULTIVATED.

THE increasing use of gum camphor and the restricted sources of supply, coupled with the fact of its having become a monopoly of the Japanese government, have tended to the establishment of a higher level of prices, which is being felt seriously in certain lines of industry. Before the invention of celluloid and of smokeless powder, in the manufacture of both of which camphor is essential, no such prices for the raw material had ever been recorded as now prevail. An English writer has compiled figures running back to the time when camphor was purchasable at one-eighth of the present price.

Since the Japanese gained control of the island of Formosa, whence most of the camphor comes, the area producing this gum has been widened, and better methods used for producing it, but this has not tended to lower the price, on account of the growing demand, to say nothing of the monopoly now existing. Meanwhile the Japanese are reported to have succeeded, in competition with European and American refiners, in producing refined camphor of such quality that they may in time control the whole situation by allowing no crude camphor to be exported. This has led to serious attempts, particularly in Germany and France, to produce a substitute for camphor. These, however, do not appear to have yielded important results as yet.

Another means of escape from the Japanese monopoly may exist through the cultivation of the camphor tree, which is about

to be encouraged in a practical way by the government of Madras, in India. It is asserted that the tree will grow there, and Mr. J. McKenzie, of Prospect estate, Nedivattam, is the first to obtain from the government special favors in consideration of planting 60 acres in camphor. Cultivated trees are expected to yield camphor within 5 years.

The importation of camphor into the United States varies in amount, but of late has been heavy. The following figures, relating to imports of crude camphor, are supplied by customs reports:

YEAR.	Imports. Pounds.	Value.	Av. per. Pound.
1892-93 .....	1,733,425	\$446,548	25.6 cents
1896-97 .....	1,496,587	332,745	22 cents
1903-04 .....	2,472,440	874,665	35.3 cents
1904-05 .....	1,904,000	638,744	33.5 cents
1906-07 (8 months).....	1,580,527	759,004	48 cents

Crude camphor is entered free of duty, and refined is dutiable at 6 cents per pound. Imports of refined in the fiscal year 1904-05 were 214,050 pounds, valued at 54.8 cents. Late quotations at New York were \$1.24@\$1.25 for American and \$1.30@\$1.33 for foreign refined.

#### THE SALE OF RUBBER SEED.

THE rapid extension of rubber planting in Ceylon and the Malay States has created a demand for seeds and plants which has added materially to the profits of some of the plantations already existing, the young *Hevea* trees beginning to fruit even before reaching the tapping age. Some planters, however, insist upon buying seeds only from mature trees. A recent Ceylon paper contains advertisements from more than a dozen estates offering rubber seeds and plants for sale, the usual price being equivalent to \$1.62 (gold) per 1,000 seeds and stumps as high as \$6.50 per 1,000. One of the planting companies, in its latest annual report, credits \$11,346.83 (gold) to the sale of 3,000,000 seeds and 41,500 plants; another reports sales amounting to \$8,478; a third, \$22,707; a fourth, \$5,752, and so on.

## THE EDITOR'S BOOK TABLE.

HANDBUCH DER GUMMIWAREN-FABRIKATION. EIN PRAKTISCHES HILFSBUCH FÜR FABRIKANTEN, CHEMIKER, BETRIEBSLEITER, UND KAUFLEUTE IN GUMMIWAREN-FABRIKEN. Von Adolf Heil und Dr. W. Esch. Dresden: Steinkopff & Springer. 1906. [Cloth. 8vo. Pp. 252. Price, 11.50 marks.]

THE authors of this work bring to its production the aid of a familiarity with the chemistry of rubber and with factory practice, and while they by no means undertake to set down all that is needed to make the rubber manufacture a success, they do point out clearly the task which confronts him who would master the essentials in this much diversified industry. Thus there is enough in regard to the nature of rubber and the difference between the various commercial grades, to help one appreciate the importance of care in the proper selection for compounding for different kinds of goods. The importance of proper compounds is nowhere lost sight of, and nearly a hundred typical mixtures are given in the book. Of course a book of compounds alone will not make a rubber factory superintendent any more than a "cook book" will make a chef; still, before making up rubber goods one must know what to put into them, and an idea of what proportions have proved successful in practice is helpful.

Illustrations are given of the principal machines used in rubber working, with an account of the function of each and instruction in its use. There are details on the manufacture of twenty classes of soft rubber goods, from hose pipes to elastic threads, and also on hard rubber goods, following chapters of a general nature on washing, mixing, calendering, and vulcanizing. There is also a chapter on reclaiming rubber. Incidentally the history of the rubber industry is told briefly, ascribing the discovery of vulcanization to Good-year. The authors have a field large enough for an encyclopedia, but in their restricted space the ground has been covered well.

RUBBER CULTIVATION IN THE BRITISH EMPIRE. A LECTURE Delivered before the Society of Arts. By Herbert Wright, A. B. C. S., F. L. S. London: MacLaren & Sons. 1907. [Cloth. 16mo. Pp. vii + 100 + plates. Price, 2s. 6d.]

THE author, until lately controller of the Ceylon government experiment station, where he devoted much attention to rubber culture, on being invited to address the London Society of Arts, sketched the extent and limitation of the natural sources of rubber, and the development of planting the different species in various regions, but particularly within the British empire. Results are stated in detail, with a forecast based upon what has been accomplished to date. The publishers, by special arrangement, have brought out the present edition of the lecture, in addition to its publication by the society, adding illustrations and notes of interest. The lecture is followed by a report of the discussion to which it gave rise, and in which several rubber brokers and manufacturers participated, the whole indicating how deeply the rubber trade in Britain are becoming interested in the planting question.

THE CONGO. A REPORT OF THE COMMISSION OF ENQUIRY Appointed by the Congo Free State Government. A Complete and Accurate Translation. New York and London: G. P. Putnam's Sons. 1906. [Cloth. 8vo. Pp. 171. Price, \$1.]

WHILE this is not, strictly speaking, a book about rubber, the rubber trade lies at the bottom of the Congo question, which question probably will not be settled with much definiteness until the wild supplies of rubber have become exhausted. What may then be developed in the way of mineral wealth is another question; also whether Leopold's heirs in the ownership of the Congo will administer it better than he has done. As to the excellence of the translation, as claimed on the title page, we can say nothing. The book is informing in regard to the Congo country in general, and no doubt is more trustworthy than the books of the "horror" writers who have had so much to say about that part of central Africa.

SELF PROPELLED VEHICLES. A PRACTICAL TREATISE ON THE Theory, Construction, Operation, Care and Management of all Forms of Automobiles. By James E. Homans, A. M. New York: Theo. Audel & Co. 1907. [Cloth. 8vo. Pp. vii + 598 + plates. Price, \$2.]

THIS is the sixth edition of a practical book intended to help machinists and owners of motor cars to understand the construction, use and care of these vehicles. The work has "worn" well and with each new edition it has been brought more up to date and rendered broader in scope. Four of the 51 chapters are devoted to tires, besides which these necessary appendages of the automobile are referred to frequently elsewhere in the book.

BOLIVIA. ADDRESS DELIVERED BY THE BOLIVIAN MINISTER, Mr. Ignacio Calderon, Under the Auspices of the National Geographical Society, at Washington, D. C. Second Edition. London: 1907. [Paper, 8vo. Pp. 21.]

WHILE the natural wealth of Bolivia to-day is no greater than before Columbus turned traveler, it is much nearer realization, and a valuable service is being rendered to the country by its capable representative at Washington, the author of this address. Bolivia's greatest handicap is the lack of transportation facilities, being denied access by water to the seaboard, but the railway construction now assured will before many years open the way to rubber fields reputed to be the richest in the world.

## IN CURRENT PERIODICALS.

DIE ANZUCHT UND KULTUR DES *Manihot Glaziovii* IN KIBWEZI (British East Africa). By Georg Scheffer. — *Notizblatt des Königl. botanischen Gartens und Museums zu Berlin*. IV-39 (Feb. 20, '07). Pp. 263-278.

DIE *Manihot Glaziovii* KULTUR IN MADAGASCAR. By O. Oehlerking. — *Der Tropenpflanzer*, Berlin. XI-4 (Apr., '07). Pp. 244-248.

L'HEVEA DISCOLOR DE LA RÉGION DE MANAOS. By O. Labroy. — *Journal d'Agriculture Tropicale*, Paris. VII-69 (March 31, '07). Pp. 69-71.

ENSAIO D'UMA SYNOPSE DAS ESPÉCIES DO GÊNERO *Hevea*. [Contribution to a synopsis of the species of the genus *Hevea*.] By Jacques Huber, FR. D. — *Boletim do Museu Goeldi*, Para. IV-4 (March, '06). Pp. 620-651.

ON THE LIFE HISTORY OF *Termes* (*Coptotermes*) *Gestroi*, Wasm., THE *Hevea* RUBBER TERMITE. [The white ant pest; illustrations.] By E. B. Stebbing, F. L. S. — *The Indian Forester*, Allahabad. XXXIII-1 (Jan., '07). Pp. 6-12.

THE preferential tariff concessions of Brazil in favor of certain products of the United States, in effect temporarily for some time past, have been made permanent. Under these provisions manufacture of india-rubber, gutta-percha and celluloid are admitted at rates of duty 20 per cent. lower than are applicable to products of other countries.



WHERE CHARLES GOODYEAR WAS BORN.

[Modern view of the house at New Haven, Connecticut, owned at the time of Goodyear's birth, December 29, 1800, by his father, a merchant and manufacturer.]



## NEW TRADE PUBLICATIONS.

**SOCIETE INDUSTRIELLE DES TELEPHONES** (Paris), one of the leading French houses in the rubber industry, being capitalized at 18,000,000 francs [= \$3,474,000], in addition to insulated wires and cables, tires and general rubber goods, pay special attention to waterproof garments for men and women, which they make in great variety. A recent catalogue [8¾" × 10¾". 36 pages] contains illustrations of many of their styles, including some which are designed for motorists' use. It is accompanied by an album of specimens of various tissues adapted to their waterproofing, nearly 200 in number.

**THE OHIO RUBBER CO.** (Cleveland and Cincinnati) have brought out their 1907 catalogue of Buckeye Brand Waterproof Clothing, including mackintoshes, rubber surface goods and rain-coats [5¾" × 7¾". 23 pages], containing many attractive styles, together with a separate net price list.

**BOWERS RUBBER WORKS** (San Francisco) have grouped together an interesting set of views, from photographs, illustrating the progress made in the reconstruction of their factory since they were burned out in April, 1906. [7¾" × 6". 24 pages.]

**THE DIAMOND RUBBER CO.** (Akron, Ohio) send a very complete booklet on Belting, readable and well illustrated [5" × 7". 19 pages], and one entitled "Diamond Tires Are the Best" [4" × 6". 12 pages], and a number of leaflets and circulars descriptive of various products of their factories. One other which will be mentioned is a catalogue of Diamond Bicycle Tires, about the only list of the kind we have seen from an American manufacturer this season. [4" × 6". 16 pages.]

**GRAND RAPIDS FELT BOOT CO.** (Grand Rapids, Michigan) issue a booklet, "How to Select and Care for Felt Boots, Rubbers and Rubber Boots," filled with practical suggestions for wearers of such goods which dealers doubtless will be pleased to have for distribution to their trade. [3¼" × 6½". 32 pages.]

**THE RUBBER PRODUCTS CO.** (Barberton, Ohio) have sent us their Illustrated List (Catalogue A) of Druggists' Sundries, including a particularly full line of rubber gloves. [9" × 6". 32 pages.]

**JOSEPH DIXON CRUCIBLE CO.** (Jersey City, New Jersey) publish an attractive and interesting little book on "Crucibles: Their Care and Use," by John A. Walker, vice-president, treasurer and general manager of the company. The book relates to the proper use of crucibles, and the dangers of their abuse; it tells what graphite is, and why crucibles are made of it. The work is excellently illustrated. [6" × 9". 39 pages.]

**HODGMAN RUBBER CO.** (New York) issue a new illustrated price list of Druggists' Sundries and Miscellaneous Rubber Goods which covers a wide range of products. The illustrations are admirably done and give a good idea of the appearance of the goods. [6½" × 8¾". 53 pages.]

"La Favorite Products—Perry Packings" is the title of an attractive catalogue of LA FAVORITE RUBBER MANUFACTURING CO. (Paterson, New Jersey). A large variety of goods are described and a number capitally illustrated. [5¾" × 6¾". 50 pages.]

## ALSO RECEIVED.

**KOEHLS-EHRENFELDER Gummwerke G. m. b. H.,** Cologne-Ehrenfeld, Germany.—Preis-Liste [Toy Balloons, Grotesque Figures, and the like]. 8 pages.

**Pirelli & Co.,** Milan, Italy, and New York.—Price List Pirelli "Improved Construction" Tires. 4 pages.

**The Hartford Rubber Works Co.,** Hartford, Connecticut.—Midgley Treads. 19 pages.

**Commonwealth Rubber Co.,** Reading, Massachusetts.—Mitchell Punctureless Pneumatic Tires. 8 pages.

**The India-Rubber and Gutta-Percha Insulating Co.,** New York.—Habirshaw Wires and Cables. Price List. 20 pages.

**Gorham Rubber Co.,** San Francisco.—Price List of Belting, Packing, Hose, Brass Goods, etc. 72 pages.

**The Republic Rubber Co.,** Youngstown, Ohio.—Republic Tires for Automobiles. 16 pages.

**Firestone Tire and Rubber Co.,** Akron, Ohio.—"Firestone Sparks" [relating to tires]. 32 pages.

## THE MEXICAN "YELLOW TREE."

IT is reported that an application has been made to the Mexican government by Carlos Llaguno y del Hoyo for a concession to extract rubber from the tree known locally as the "palo amarillo" (yellow tree), and botanically as *Euphorbia elastica*, on all national lands in the states of Guerrero, Jalisco, Michoacan, Guanajuato, Oaxaca, Puebla, Colima, and the territories of Tepic and Baja California. This tree was illustrated and described in THE INDIA RUBBER WORLD, February 1, 1906, (page 148).

W. H. Ellis, of New York, who has done something in the way of exploiting guayule companies in Mexico, gaining control of the factory at Gomez Palacio of the National Rubber Co. (a Texas corporation), is mentioned by a German paper as about to operate very largely. He is referred to as organizing the Continental Palo Amarillo Rubber Co., with \$20,000,000 capital, to exploit not only guayule, but rubber from the "palo amarillo" tree, and also from the "amate" tree, which latter is said to abound in several Mexican states. Ellis, by the way, is not known in New York as a banker of such prominence as reported in Mexico. He last figured in public in connection with a personally conducted mission to Abyssinia, coming back in charge of a saddle presented by the Emperor Menelik to President Roosevelt. He failed to notice the abundance of rubber in Abyssinia, which later, being observed by an Arab merchant, was made the basis of a concession and a largely capitalized British company, with the Arab as manager.

At the Antwerp rubber sale of January 16 the offerings included 1 ton of "Amarillo" rubber, from Mexico, estimated by the official broker at 2.50 francs per kilo [= 21.8 cents per pound], but withheld from sale at 2.70 francs.

## RUBBER TIRE MISCELLANY.

THE Hartford Rubber Works Co. are making solid motor tires, both single and double, with coiled springs in the tread to prevent skidding, and also with coiled springs in the base to render it more rigid and allow of narrow channel fastening.

A physician in Port Huron, Michigan, Dr. G. H. Tredgold, is the inventor of a spare wheel, not of the Stepney type, but more like an ordinary artillery wheel cut in half, and built to clamp over the hub by the side of a punctured tire. It is a little larger in diameter than the tire that it is intended to relieve, and one could without doubt bump home upon it.

"Rub-Metal"—we do not know just what it is—but it is something that the New Motor and General Rubber Co., Limited (London), claim is far superior to leather and in use is vulcanized to the tread of the tire either with or without metal skids imbedded in it.

An English invention for the prevention of side slip is a series of flanges sharpened at the ends and hardened, which pass through the channel and rim of the wheel between twin tires. It would seem as if in actual service they might be a trifle hard on the road.

A patented nonskid for cycle tires known as "Handelmaatschappij," fastened around the tread of the tires by a series of strong clamps, is made by R. S. Stokus & Zonen, Rotterdam, Holland. It is said to do the work excellently. In case one is not equipped with this type of antislip device it is advised that you take the name above and run it lengthwise around the tread and skidding will be absolutely prevented.

Spare tires are often taken from automobiles by thieves simply by cutting the straps that hold them, therefore the Allen Bag and Specialty Co. (New York) have brought out a bronze tire lock capable of fastening two 5 inch tires to the running board.



## New Rubber Goods in the Market.

### "SACO" PNEUMATIC PLUNGER.

SOMETHING new presents itself to the favor of the public in this little sanitary bathroom and lavatory cleansing appliance. The "plunger" is made of corrugated rubber, with a polished hardwood handle, and is used to remove dirt and sediment from the closet bowl by allowing the water to flow into the bowl and then applying the plunger with a light, quick touch. As soft rubber grips glazed surfaces and cleans perfectly, this little device holds advantages over brushes and cloths in the way of cleansing, and moreover it is perfectly sanitary and emits no unpleasant odors after having been in use. It also may be used for removing obstructions from the closet into the trap. In the same way obstructions can be forced from waste pipes of sinks, bath tubs, and so on. A great advantage lies in the fact that the hands do not have to be immersed in the water to accomplish the work of cleansing, and the plunger is not high priced. [Sanitary Appliance Co., No. 1126 Walnut street, Philadelphia.]

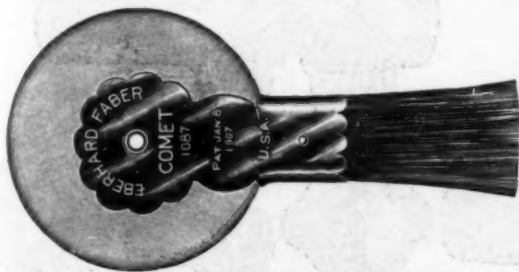


"SACO"  
PLUNGER.

A FABRIC that is meeting with general favor among the fair autoists is Rubba-Silk. Its name indicates the qualities it possesses. The waterproof quality of rubber and the delicate texture of silk or satin have been successfully combined in this case. A coating of pure Pará rubber makes it strong, yet it is not stiff or ungainly, but hangs in easy, graceful folds much as does the goods it seeks to imitate. Another quality that wins it favor is that of being spotproof as well as waterproof. Devotees of the yacht are also finding in "Rubba-Silk" just the thing for their comfort and pleasure, and it would seem to lend itself to almost any out-of-door pleasure or sport. It is made in two grades, the "Lohengrin," with an all-silk face, and the "Parisiana," with a wool and silk face. These goods are made in all the popular shades. [William M. Poz, Nos. 477-481 Broome street, New York.]

### THE "COMET" ERASER.

THIS is a convenient and practical article for desk work, and one which differs from other erasers in being more conducive to neatness. The metal holder on which the round eraser is pivoted, so that it always puts in operation a fresh surface for



THE "COMET" ERASER.

erasing while in operation, forms, also, the receptacle for a small brush, with which the displaced particles are removed from the paper. The "Comet" eraser is made by one of the leading firms in the line of stationers' sundries, and, being an article suited to a wide demand, is, of course, fully protected by patents. [Eberhard Faber, No. 299 Broadway, New York.]

### THE "BLIZZARD" APRON.

A CERTAIN sense of satisfaction which is greatly appreciated by the woman about the house is that afforded by the knowledge that the apron she is wearing is

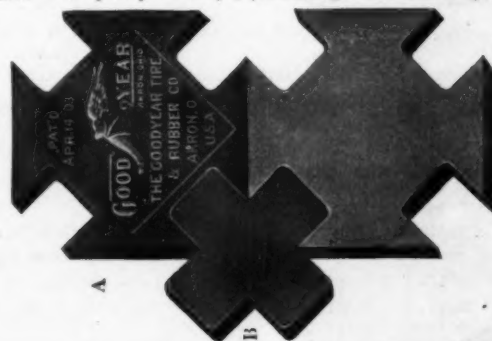


THE "BLIZZARD" APRON.

absolutely waterproof as well as grease-proof. No matter how carefully one may be "aproned" with ordinary protection of this sort, one is never immune from the water spots, and others more offensive, that defy the most painstaking. The "Blizzard" kitchen apron is 36 X 45 inches in size, complete with strings. It is made of light rubber cloth and may be got in black or white. Besides the housewife, others use it quite as much, and to them it offers a corresponding satisfaction. In laboratories, hospitals, factories, and hotels, it is often in evidence, while dentists find it in their professional work most helpful and conducive to cleanliness. [The Vehicle Apron and Hood Co., Columbus, Ohio.]

### GOODYEAR-AKRON TILING.

THE embodiment of floor comfort, quiet and durability is to be found in the use of rubber tilings, which are enjoying a measure of popularity which already has outlasted the time usually allotted to a mere fad. Rubber has already reached a prominence in the flooring of public offices, banks, hospitals, churches, hotels, libraries and in residences, that points to a permanent use of this material. As to the particular tiling to be used, there are various details to be considered. A desirable feature is simplicity of shape, permitting a wide variety of de-



GOODYEAR-AKRON INTERLOCKING TILING.

sirable combinations of designs to be made from a few pieces. The Goodyear-Akron Interlocking tiling, of which an illustration is given here, is supplied in two patterns, from which may be formed floor designs in plain and ornamental styles, squares, continuous designs, borders, and so on. The accompanying designs, of course, are much reduced in size. Four of the larger tiles occupy one foot in length; hence there are 16 of these tiles and a corresponding number of the smaller ones to a square foot. Another feature of this tiling is the ease of repair. The design is such that a worn tile can be replaced without disturbing the surrounding tiles. It is made in nine colors—white, black, slate, blue, buff, yellow, red, green and chocolate. [Goodyear Tire and Rubber Co., Akron, Ohio.]

**"H. & H." TIRE TOOL.**

THE illustration shows this simple tire tool in use, and is so clear as to render an elaborate description unnecessary. The tool is employed to remove or replace lugs, or for putting in the valve stem while replacing an inner tube. To place a valve stem or lug, the hooks are placed under the bead of the shoe and the lever on the tread, and the tire pushed back out of the way. Near the end of the handle the tool is made thinner, and there is also a slight bend. This makes an excellent device for removing the bead of the tire from the rim.

**"H. & H." TIRE TOOL.**

The tool is reversible, so that its use is equally practicable for large or small tires. [Hancock & Heller, Binghamton, New York.]

**THE MESINGER TIRE REPAIR BAND.**

MANY tourists have found the Mesinger tire repair band of great convenience. It is made of mineral chrome leather, which is tough, soft, and pliable, and water does not affect it. Heavy, strong eyelets are in the sides through which the band

**MESINGER TIRE REPAIR BAND.**

is secured with a strong leather lacing, and it comes in sizes  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$  and 5 inches, ready to attach to the tire. The Mesinger non-skidding tire band can also be used as a tire band. This band is made of the same material as the repair band, with an extra fabric lining, and steel rivets over the tread. Instead of having tire protectors on the rear wheels, three, four, five or six of these bands are put on to prevent skidding. [H. & F. Mesinger Manufacturing Co., No. 1801 First avenue, New York.]

**"NO-WATE" FOOTHOLDS.**

THESE footholds are just what the name implies, their weight when on the shoe being almost imperceptible. But their lightness of weight is not their only claim upon the attention of the

**"NO-WATE" FOOTHOLD.**

woman who wishes to be well dressed and at the same time comfortable, so far as footwear is concerned. They are well designed, the lines being good, and they are of unusual flexi-

bility. Special protection is afforded by a reinforced toe, and for the heel strap, in place of the usual rubber support, an elastic band is substituted. The dainty way in which they are put up appeals to the feminine fancy, each pair being encased in a silk bag, rubber lined, drawn with silk cord—a most convenient and sightly means of carrying them or packing them. [The Maple Leaf Rubber Co., Port Dalhousie, Ontario.]

**BOAT AND CANOE CUSHIONS.**

NOTHING adds more comfort to canoeing than an air cushion, and the "Zephyr" air cushion has the requisite qualities that comfort implies. They are made in two kinds, single and double, and in weights ranging from 17 to 46 ounces. The lightest of the single cushions weighs 17 ounces and the heaviest 24 ounces, while the lightest of the double cushions weighs 34 ounces and the heaviest 46. They vary in size also, the smallest being  $12 \times 12$  inches

[Single.]  
**ZEPHYR AIR CUSHION.**[Double.]  
**ZEPHYR AIR CUSHION.**

and the largest  $15 \times 15$ , in the single cushions. The double cushions in the smallest size,  $12 \times 12$ , have seat and back alike, while the other sizes have seats a few inches larger than the backs. The largest seat in the double cushion is  $15 \times 15$  and the back  $15 \times 28$ . The covers are made of a fine quality of brown duck, corduroy, or leather. The life-line attachment with which they are equipped gives a feeling of safety which affords the last touch of comfort—the original premise. [Metropolitan Air Goods Co., Reading, Massachusetts.]

**GOODALL HIGH PRESSURE COUPLING.**

THE Goodall high pressure air and steam hose coupling, illustrated herewith, is made in all sizes from  $\frac{3}{4}$  inch to 3 inches. Being strongly and substantially made, it is designed to withstand severe usage, adapting it especially for steam and air drill

**GOODALL HIGH PRESSURE COUPLING.**

service. It is referred to as being easily and quickly attached, reducing the inside diameter less than other high pressure couplings, and costing less than others. The manufacturers guarantee it particularly in respect of safety. [Knox Manufacturing Co., No. 153 North Fourth street, Philadelphia.]

# Recent Patents Relating to Rubber.

## UNITED STATES OF AMERICA.

ISSUED MAY 7, 1907.

- N**O. 852,436. Pneumatic cushion wheel. M. A. Holzmark, Kansas.  
 852,529. Wheel tire. [Solid rubber tire having separate circumferential tread portions and a groove between them, crosswise within the base, and a circumferential locking wire in the place of the groove and above the wires.] J. A. Swinehart, Akron, Ohio.  
 852,540. Horseshoe [with rubber pads]. A. A. Humbaugh, Fort Wayne, Ind.  
 852,619. Detachable inner tube for pneumatic tires. Frank Rich, Crawley, England.  
 852,716. Tire repairing plug. M. W. Hall, Gloversville, N. Y.  
 852,834. Idle tire holder [for motor cars]. W. H. Gransden, assignor to Appliance Mfg. Co., both of Chicago.  
 852,855. Machinery for use in the manufacture of pneumatic tires. [Described in THE INDIA RUBBER WORLD, June 1, 1907, page 283.] T. and R. Sloper, Devizes, England.  
 852,986. Tire plug. F. N. Stevens, Rutherford, N. J.  
 852,999. Water bottle, water cushion, water bed and like receptacles. [Relates to a valve fitting.] J. B. Brooks, Birmingham, England.  
 853,058. Wheel rim [the Marsh rim, made by the Diamond Rubber Co.]. R. S. Bryant, Columbus, Ohio.

### Reissue.

- 12,645. Pneumatic tire plug. David Apstein, Bridgeport, Conn.

ISSUED MAY 14, 1907.

- 853,228. Vehicle wheel and pneumatic tire for same. R. Dalmer, London, England.  
 853,260. Vacuum drying apparatus [for crude rubber and other substances]. E. Passburg, Berlin, Germany.  
 853,299. Wheel rim and tire. P. Ebner, Columbus, Ohio.  
 853,326. Art of applying reinforcing fabric to innersoles. A. Thoma, Cambridge, Mass., assignor to Clifton Mfg. Co.  
 853,429. Method of making a solution for hard rubber coating. [Consists in masticating 2 parts india-rubber in steam or hot water bath, then hot milling therewith 1 part sulphur flour, 2 parts cottonseed oil and 1-3 part raw linseed oil, and then dissolving this substance in 8 parts naphtha.] E. F. Upton and M. E. Fisher, assignors of one-fourth each to D. O. Vankirk and E. Vankirk, all of Mineral City, Ohio.  
 853,439. Inhaler [for administering anesthetics]. A. C. Clark, Chicago.  
 853,467. Protected cushion wheel. [Cushion tire, with protective outer tire.] H. I. Nagle, Abbotstown, Pa.  
 853,537. Handle thimble. J. Dubisse, Philadelphia.  
 853,574. Wheel rim or felly [with detachable flange]. H. Pataud, Paris, France.  
 853,619. Doll. Elizabeth T. Hincks, Andover, Mass.  
 853,687. Wheel. [Comprises an elastic tire, a supporting tire within the elastic tire and bearing against the inner circumference thereof and composed of a plurality of concentric independent rods whereby they may individually yield to pressure of the elastic tire and supporting plates at intervals within the circumference of the supporting tire and each having grooves receiving the independent rings thereof.] I. W. Giles, New Bedford, and C. W. Tobey, Fairhaven, Mass.  
 853,708. Catamenial sack. F. X. Mathias, Jr., and L. Simon, Philadelphia.  
 853,718. Process for the treatment of the milks or lactiferous juices of caoutchouc, gutta-percha, and balata and the like. [Consists in applying to the surfaces of the trees over which the juices flow an alkaline solution.] L. Morisse, Paris, France.  
 853,792. Vehicle tire. G. E. Huguley, Atlanta, Ga.

### Trade Marks.

- 23,643. John A. Roebling's Sons Co., Trenton, N. J. The word *Roebling*. For insulated electric wires.  
 23,644. John A. Roebling's Sons Co., Trenton, N. J. Monogram *J. A. R.* Insulated wires.  
 26,357. Lawton & Hall, Chicago. The words "*Duck Brand*" over a swimming duck on whose wing appears the word *Brand*, and below the water are the words "*Sheds Water*." Rain coats.  
 26,748. Continental Rubber Co., Jersey City, N. J. The words *Square Brand* enclosed in a square with openings at regular intervals, this being enclosed in a larger square of the same style. Crude rubber and substitutes therefor.  
 26,749. Continental Rubber Co., Jersey City, N. J. The words *Triangle Brand* enclosed in a triangle with openings at regular intervals, and this in turn enclosed in a larger triangle of the same style. Crude rubber and substitutes therefor.  
 26,786. R. P. Smith & Sons Co., Chicago. The word *Wizard* in script. Rubber footwear.

ISSUED MAY 21, 1907.

- 854,063. Wheel. [Combination with wheel and clincher tire of a band applied to the body of the wheel with notches in its edge and a clincher ring formed of two circumferential members, one member being secured to the band and the other having lugs to enter the notches.] J. Thomson and F. W. Kermer, assignors to Trident Tire Co., all of New York city.  
 854,135. Gasket. [Comprising a metallic core and compressible material.] J. R. Whittemore, Indianapolis, Ind.  
 854,137. Tire protector. S. C. Wolfe, Angola, Ind.  
 854,178. Nozzle holder [for garden hose]. J. H. Ruff, Hollywood, Cal.  
 854,182. Tire or other valve. M. C. Schweinart, West Hoboken, N. J., and H. P. Kraft, New York city.  
 854,186. Tire protector. H. L. Voss, Miles, Tex.  
 854,213. Tire protector. J. E. Heale, Anaconda, Mont.  
 854,215. Tire case. F. B. Hopewell, Newton, Mass.  
 854,234. Packing or gasket. E. L. Perry, Paterson, N. J.  
 854,239. Hydraulic packing. [A series of metallic rod embracing rings, with compressible rings intermediate.] C. F. Rigby, New Martinsville, W. Va.  
 854,287. Rod packing. O. J. Garlock, Palmyra, N. Y.  
 854,487. Eraser holder for lead pencils. B. B. Goldsmith, New York city.  
 854,488. Eraser tip for lead pencils. *Same*.  
 854,534. Vaginal syringe. H. R. Searles and S. S. Jones, Carbondale, Pa.  
 854,549. Tire fastener. [Means for retaining solid rubber tire.] C. L. Williams, Steubenville, Ohio.  
 854,641. Controlling nozzle for hose and hose pipe. T. Haley, Boston.  
 854,655. Vehicle wheel. [Metallic rim in two sections, with rubber between, to afford resilience.] E. F. Krell, Detroit, Mich.  
 854,670. Apparatus for the extraction of dust from carpets and other articles. [Suction device.] F. V. Schiödt, Copenhagen, Denmark.

### Design Patent.

- 38,580. Tiling. A. A. Spadone, New York city, assignor to The Gutta Percha and Rubber Mfg. Co.

### Trade Marks.

- 18,476. Pennsylvania Metallic Packing Co., Pittsburgh, Pa. The words "*Bull Dog*" in duplicate and a picture of a bull dog, all enclosed in a triangle. For metallic, rubber, and fibrous packings.

ISSUED MAY 28, 1907.

- 854,852. Cushioned horse shoe. W. R. Smith, assignor of one-half to H. H. Hewitt, Buffalo, N. Y.  
 854,914. Wheel for vehicles. [With solid rubber tire.] R. T. Smith, Jr., Warrington, England.  
 855,024. Tire. [Solid rubber, in twin form.] E. F. Sobers, Bethlehem, Pa.  
 855,026. Tire pump. W. S. Stapley, assignor to Bridgeport Brass Co., both of Bridgeport, Conn.  
 855,096. Spring wheel [with solid rubber tire]. J. W. Cooper, Boston.  
 855,188. Hoof pad. A. Larsen, Chicago.  
 855,199. Resilient wheel for vehicles. [With solid rubber tire, in three circumferential tread sections.] J. Partington, Saltaire, England.  
 855,232. Hose coupling. C. C. Corlew, Fresno, Cal.  
 855,433. Pneumatic dust remover. M. E. Freeman, assignor of one-half to J. J. Freeman, both of Bradford, Pa.

### Trade Marks.

- 23,076. Frank W. Whitcher, Boston. The word *Clincher*. For rubber patching, heels, soles and taps.  
 25,588. Pacific Coast Rubber Co., Seattle, Wash. Four-leaf clover with the letters *P. C. R. C.* on the leaves. Surgical rubber goods.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

## GREAT BRITAIN AND IRELAND.

### PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1906.

\*Denotes Patents for American Inventions.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, APRIL 24, 1907.]

- 26 (1906). Revolvable sole and heel protector. A. R. Huskisson and G. Morton, Blackley, near Manchester.  
 147 (1906). Leather cover for pneumatic tire. A. Chanrion, Lyons, France.  
 243 (1906). Instrument for introducing stopping material into cavities in teeth. P. F. Rutterford, London.



- 282 (1906). Rubber-faced waistbands to hold a skirt in position. R. L. Gooding, Bridgetown, Barbados.  
332 (1906). Detachable tread band for pneumatic tires. C. M. Gautier, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 1, 1907.]

- 489 (1906). Revolving heel pad. T. T. Spencer, New Barnet, Hertfordshire.  
453 (1906). Pneumatic tire with cork segments between the cover and inner tube. J. A. F. Hall and L. C. Stevens, Eastbourne.  
640 (1906). Rim for pneumatic tire, with detachable flange. C. H. Stotesbury and T. P. Reid, London.  
656 (1906). Coupling for hydraulic hose. J. Muskett, Pendleton, Manchester.  
671 (1906). Rims for vehicle tires, with detachable flanges. E. Herbert and H. J. Whyatt, Bristol.  
692 (1906). Belt of leather, with cross strips of metal, to prevent slipping of pneumatic tires. S. G. Jones, London.  
\*762 (1906). Bathing cap. F. E. Herndon, Dallas, Texas.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 8, 1907.]

- 1051 (1906). Heels and heel protectors with adjustable and renewable wearing surfaces. H. J. Millard, Northampton.  
1053 (1906). Solid rubber tires, twin treads, with clincher rim. J. W. Cann, Folkestone, Kent.  
1082 (1906). Heel protectors retained by interlocking plates. R. Barnes, Fitzroy, Victoria.  
1242 (1906). Solid rubber tires, single or twin, secured by holding rims. J. Taylor, St. Ann's-on-Sea, Lancashire.  
1409 (1906). Pneumatic tire with two inner tubes. A. H. Devenoge, Deauville-sur-Mer, France.  
1502 (1906). Detachable device to protect pneumatic tires from puncture or side slip. H. Parsons, Southampton.  
1527 (1906). Spring wheel fitted with solid or pneumatic tire. C. Merlington, Droxford.  
1582 (1906). Spring wheel with resilient tire. R. H. I. Cook, Greenwich.  
1593 (1906). Elastic tire made up in sections of soft rubber and vulcanite. F. Reddaway, Pendleton, Manchester, and W. A. Sankey, Sutton.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 15, 1907.]

- 1620 (1906). Boot or shoe waterproofed with the use of waterproof paper. R. Trebitsch and two others, Vienna.  
\*1661 (1906). Vaginal syringe. C. O. Farrington and T. Watson, Sealy, Texas.  
1743 (1906). Hose coupling. J. C. Merryweather, London.  
1761 (1906). Pump for inflating tires. M. G. Asbjörnsen, London.  
1863 (1906). Hose coupling and valves. F. Weinrich, Remscheid, Germany.  
1885 (1906). Puncture proof tread for pneumatic tires. W. Blamires, Harrogate.  
1932 (1906). Pneumatic tire without inner tube. C. Burnett, Durham.  
1933A (1906). Pneumatic tire with recessed tread to prevent slipping. C. Burnett, Durham.  
2041 (1906). Stud for use on pneumatic tire covers. A. Beaud, Villeurbanne, France.  
2106 (1906). Take-up motions for looms. [Bands of soft material like india-rubber passing around one of the take-up rollers and a carrier roller grip the fabric.] F. S. Hamel, Tamworth.  
2118 (1906). Anti-skidding device for pneumatic tires. A. J. Noel, London.  
2172 (1906). Lever for adjusting pneumatic tires. R. Connell, Gainsborough.  
[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MAY 23, 1907.]  
\*2192 (1906). Wrapper for pneumatic tires when not in use. H. R. Teel, Medford, Massachusetts.  
2247 (1906). Cutting machine for india-rubber, waste-hose and the like, with or without armor. H. M. Wilkinson, Paris; R. R. Gubbins, East Greenwich, and E. Quin, London.  
2366 (1906). Apparatus for cleansing waste pipes. [Hose with funnel shaped end.] F. Petri, Lippstadt, Germany.  
2403 (1906). Inflated lay figure, for garment makers' use. J. Ramb, Berlin.  
2443 (1906). Jointed stopper involving an india-rubber ring. G. V. DeLuca, Bromley, Kent.  
\*2471 (1906). Device for and process of waterproofing fabrics, particularly leather for shoe inner soles. A. J. Boulton, London. (United Shoe Machinery Co., Paterson, New Jersey.)  
2484 (1906). Rubber pads for soles and heels, with leather foundations to facilitate attachment. W. C. Allen, Stockport.  
2488 (1906). Rubber belts for conveyors, fortified by the insertion of layers of canvas. F. Reddaway, Pendleton, Manchester.  
\*2518 (1906). Pneumatic tire, with recesses in the tread for anti-slipping plates. G. O. Heine, San Francisco, California.  
2534 (1906). Pneumatic tires and tubes coated internally with Turkish birdlime to stop punctures automatically. T. H. G. Gayner, South Melbourne, Australia.  
2576 (1906). Rim for attaching a pneumatic tire with a sectional air tube. A. R. Whitehead, Far Headingley, Leeds, and T. H. Shaw, Bradford.

- 2589 (1906). Cylinder for multicylinder engine for motor cars, convertible into a tire inflating pump. J. Hacking, Chorley, Lancashire.  
2621 (1906). Pneumatic tire with compressed wood fiber strips fixed to a leather tread-band. C. Gregaud, Paris.  
2760 (1906). Pneumatic tire. E. C. Tame, London.  
2791 (1906). Non-slipping composition for tires, formed by mixing powdered furnace slag and rubber. P. J. Jackson, London.

## THE FRENCH REPUBLIC.

### PATENTS ISSUED (WITH DATES OF APPLICATION).

- 370,387 (Aug. 30, 1906). A. Napoleon. The fabric.  
370,404 (Oct. 3). druchet. Antiskid tire.  
370,414 (Oct. 9). L. Herbert. Tire fastening device.  
370,444 (Oct. 12). H. Libling. Puncture-proof tire.  
370,526 (Oct. 16). Société de Caoutchouc. Pneumatic tire.  
370,536 (Oct. 17). Griffiths. Spring wheel.  
370,552 (Oct. 16). J. E. Gallaud. Tire fabric.  
370,639 (Oct. 20). Kunzler. Elastic tire.  
370,619 (Oct. 19). A. Tixier. Rubber reclaiming process.  
370,714 (Oct. 23). E. Giraud. Elastic tire.  
370,739 (Oct. 24). A. Martin. Anti-skid.  
370,755 (Oct. 25). Ripert and Schmitt. Elastic tire.  
370,857 (Oct. 26). H. Guerin. Burst-proof for pneumatics.  
370,871 (Oct. 27). A. Gentzsch. Rubber reclaiming process.  
370,872 (Oct. 27). A. Gentzsch. Rubber reclaiming process.  
370,904 (Oct. 29). Brossé. Elastic tire.  
370,926 (Sept. 3). Finck. Tire filling compound.  
370,819 (Aug. 21). L. Babert. Rubberized leather.  
370,826 (Oct. 13). Tauber and Schweinburg. Pneumatic tire.  
370,921 (Oct. 29). E. Warwick. Antiskid for tires.  
371,105 (Nov. 5). A. L. Cudez. Antiskid for tires.  
371,157 (Nov. 7). A. Kuntze. Antiskid for tires.  
371,195 (Oct. 19). R. P. Kinney. Tire repairing device.  
371,340 (Nov. 13). Villevé. Double rim for pneumatics.  
371,437 (Oct. 17). Société Mitteldeutsche Gummiwarenfabrik. Louis Peter A.-G. Process for making tires.  
371,493 (Nov. 14). Nivet. Tire-making machine.  
371,515 (Nov. 15). J. D. Roots. Pneumatic tire.



VIEW ON "LA ZACUALPA" PLANTATION (MEXICO).  
[Rows of cultivated *Castilleja* trees.]



## A Page of Tire Features.



**MILLER'S SECTIONAL VULCANIZER.**

[The bead strips are held in place by one screw and are quickly removed. The vulcanizer is steam jacketed and the tire comes in direct contact with the walls. Made by Charles E. Miller, Anderson, Indiana.]



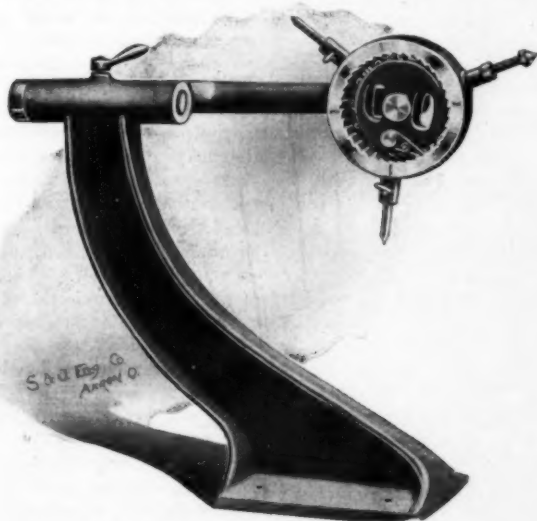
**INTERNATIONAL TIRE PROTECTOR.**

[Copper plated steel disks arranged in a stratum of rubber so as to present practically a continuous, flexible band. Separately constructed and placed between casing and inner tube. Invented by Lemon Greenwald; made by the Akron Pneumatic Tire and Protector Co., Akron, Ohio.]



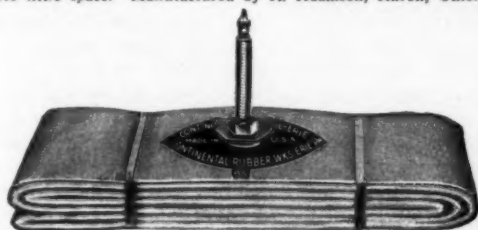
**EXTENSION TREAD PNEUMATIC.**

[The fabric in the cover is discontinued at the hinge in the tire and replaced with rubber. This gives greater elasticity to the tire, allowing it to expand to fit any pressure to which the tire may be subjected under varying conditions. Repairs can be made effectively, and new treads put on with ease. Invented by Lemon Greenwald. Akron Pneumatic Tire and Protector Co.]



**ADAMSON UNIVERSAL TIRE BUILDING STAND.**

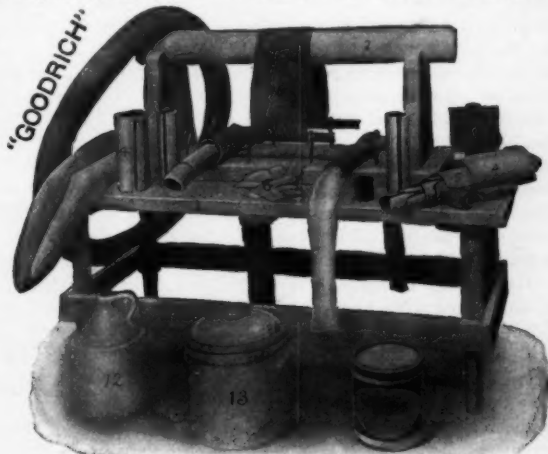
[Instantly adjusted for any size core. Ball bearing. Rigid, simple, and occupies little space. Manufactured by A. Adamson, Akron, Ohio.]



**CONTINENTAL RUBBER WORKS TUBE.**

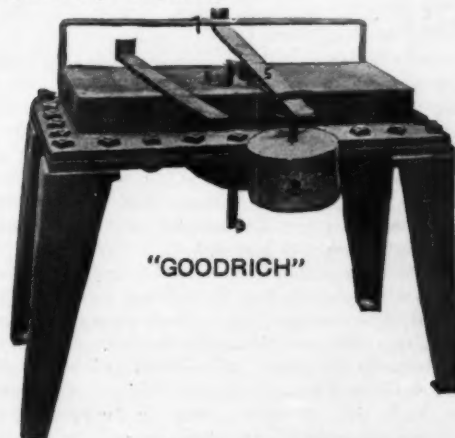
[Laminated, being made of three layers of rubber in smaller sizes and four layers in 3 1/2 inches and larger, all vulcanized together. Tubes specially re-inforced at valve base with strip of Sea Island cotton fabric and extra rubber strips, to prevent valve stem from pulling out. Continental Rubber Works, Erie, Pennsylvania.]

The Sager chain tire grip, to prevent slipping, is attached to side plates of band steel. One advantage is that if one or more chains should be broken accidentally, the others are not affected. The makers are The J. H. Sager Co., Rochester, New York.



**GOODRICH LARGE ACID SPLICING AND INNER TUBE CURING OUTFIT.**

[Particularly adapted to use in garages where air power is accessible. The B. F. Goodrich Co., Akron, Ohio.]



**GOODRICH CLINCHER TIRE VULCANIZER.**

[Flat tread type. Designed for vulcanizing patches on inner tubes, small cuts on tires, and beads of clincher cases. Operated by steam or gas. The B. F. Goodrich Co., Akron, Ohio.]

## The India-Rubber Trade In Great Britain.

By Our Regular Correspondent.

**T**HIS was the title of a paper recently read by Mr. W. F. Reid before the Liverpool section of the Society of Chemical Industry. Comparatively little was said about the utilization of waste rubber; in fact, the references to side issues were of greater length. Guayule rubber was mentioned as not

### UTILIZATION OF WASTE RUBBER.

likely to be of great importance, because the exhaustion of its available source would not yield more than 18,000 tons of rubber. There was no doubt, the author said, that plantation Pará would displace the South American product, as regards quality, in time. This prediction is a somewhat confident one in view of the absence of any definite knowledge respecting the differences noticeable at present between the supply from the two sources. Those who grow the rubber in the plantations are not, according to Mr. Reid, sufficiently informed as to the requirements of the user. Possibly they are not, but how about the South American natives? I think we may take it that while the manufacturers know the best quality rubber when they see it, they have no special knowledge of the details affecting its production, and it is difficult to see how they can help the planter in his part of the business. Later on, in the discussion, Mr. Max Muspratt, in referring to Ceylon rubber, said that it had undoubtedly been most disappointing and that rather fictitious values had been given to it at first because only small quantities were available and every manufacturer wished to try it. The descriptions which Mr. Reid gave of the reclaimed rubber business will be generally familiar to those in the trade, and they do not call for mention. Special reference was made, however, to the Lexier process, which has been "boomed" a good deal of late. I have not so far seen any of the rubber and am not competent to criticise the process, which consists shortly of digesting the powdered rubber with twice its weight of terpineol in a closed vessel at 100 to 150 degrees C. The mineral matter subsides after admixture with benzine, and the latter, having been distilled off the rubber, is then precipitated by alcohol or acetone. According to Mr. Reid this rubber is decidedly superior to other reclaimed rubber. Of course other processes have been patented having the solution of the vulcanized rubber and its reprecipitation the main features, but the rubber obtained has always been of a poor quality.

When figures given by various authors for loss in washing are compared considerable discrepancies are to be noted. That this should be so in the case of low qualities is only what might be expected, but with regard to such a uniform quality as fine

### RAW RUBBER NOTES.

Pará the matter seems to call for some explanation. With regard to this it should be noted that fine rubber to-day loses more on washing than it did a few years back, and the cause of this may undoubtedly be attributed to the acceleration in transit. The tendency of late years has been to expedite the arrival of the rubber in England, and slow boats have largely given way to fast steamers. The rubber therefore has less time than formerly to lose moisture during transit, thus causing the factory figures for loss in washing to come out higher.

With regard to plantation rubber, which had such a strong indictment in THE INDIA RUBBER WORLD from a Canadian manufacturer a month or two ago, there is a very prevalent idea that it cannot be depended upon if bought in bulk. The variations that have been so noticeable between different small parcels, have made some manufacturers chary of using it for really important work. In the card clothing industry, for instance, its use has not yet gone beyond the experimental stage. As a prominent manufacturer in this branch said to me the other day: "We have not sufficient confidence in it to buy it and stock it. With fine

Pará from South America, however, we know that, whatever bulk we may buy, we shall have uniform quality throughout."

A point with regard to some of the new Ceylon rubber companies has been impressed upon me by a late planter, and that is the expense attendant upon the weeding. A prospectus states that so much ground will be opened up and planted, but according to my informant the rapidity with which the weeds grow is frequently overlooked and if they are to be kept duly under control a considerable expense will be entailed.

A TENDENCY is noticeable in the trade for small concerns to be acquired by those in a larger and more diversified way of business, or who at any rate have larger capital resources. We have seen the taking over of the Anchor Cable Co., at Leigh, by the Calender company, and the acquisition of the St. Helens Cable and Rubber Co., by the same firm, in conjunction with other large cable companies. The Hyde Imperial Rubber Co., after a somewhat checkered career, now belongs to Mandleberg & Co., the well known waterproofing firm. A rumor now reaches me that the old established mechanical rubber firm of Broadhurst & Co., of Bradford, Manchester, is to be taken over by another local company. Broadhursts have been in the hands of a receiver for some time, and if the deal just referred to does not go through it may be taken that the business will be disposed of in another way. A recent advertisement in a contemporary is to the effect that a Scotch rubber works is for sale as a going concern. There may, of course, be family reasons for relinquishing the business in this case, but speaking generally it may be taken that the smaller concerns find themselves handicapped owing to their inability to pay for first class management.

THIS company, with a capital of £50,000, has been formed to take over the undertaking of the works of B. Cohen, Limited, at Bromley street, Manchester. The last named firm got into difficulties some time ago owing entirely, it is understood, to losses in connection with their Canadian business, and the works have been since carried on by a receiver appointed by the debenture holders. Mr. B. Cohen, who has had a serious illness brought on by mental worry, has now quite recovered, but will have no connection with the new company, Mr. Joseph Cohen being the only member of the family retaining a position in the business. Of the directors H. W. Hassberger has long been connected with the management and the bulk of the old hands will be kept on. T. Lilley and T. Lilley, Jr., other directors, are new to the rubber industry in Manchester, being prominently connected with the boot trade in London. In former times the trade carried on at these works was limited to waterproofing, but in the last few years considerable extensions have been made to enable the manufacture of mechanical goods to be carried on.

THE fact that British made rubber machinery has recently been sent out to the Straits Settlements marks a new and at least interesting departure. Up to now the districts producing raw rubber have not concerned themselves with the manufacture of finished goods, and now the European and American firms will have new competition to meet. For some time it may be expected that the manufacture will be only on a modest scale and limited to certain articles, and it must not be overlooked that although the raw material may be cheap and at hand the hundred and one other requirements of a factory will not be correspondingly cheap or easy of obtainment.

New Pegamoid, Limited (London), on May 30 registered a trust deed covering all their assets, to secure £10,000 [= \$48,665] in debentures.

### CHANGES IN OWNERSHIP OF WORKS.

### PREMIER WATER-PROOF AND RUBBER CO.

### RUBBER MANUFACTURE IN THE EAST.

## A Canadian Industrial Leader.

**M**R. S. H. C. MINER, whose retirement from the presidency of the Canadian Consolidated Rubber Co., Limited, was noted in *THE INDIA RUBBER WORLD* recently, has been associated with manufacturing in Canada generally for the past 50 years, and with the rubber manufacture in particular for about 25 years. Although having reached his seventy-second year with health and vigor preserved to a remarkable degree, his retirement from the presidency of the Consolidated Company marks his entering upon a period of well-earned rest, to which he has been looking forward for some time past. Mr. Miner played an important part in the formation of the Canadian Consolidated Rubber Co. a year ago. His thorough familiarity with the details of the rubber business, his experience in handling large financial undertakings, and above all the high esteem and confidence which he enjoyed from the whole business community, were invaluable in the adjustment of divergent interests involved to a common equitable basis. Mr. Miner became the first president of the company temporarily to permit the completion of the organization. This has now been accomplished, by the inclusion within the Consolidated company of five important rubber manufacturing concerns in the Dominion, including the Granby, his own company.

Mr. Miner has so long been identified with the rubber business in the history of the Granby Rubber Co. that he is perhaps considered by many in the trade to be simply a rubber man. The fact is, however, that few men to-day have followed so many and such varied lines of manufacture, at least successfully. He was, for example, the pioneer sole leather tanner in Canada, and when the bark on his limits was exhausted, he carried extensive lumbering operations over the vast forest regions that he controlled. Since that time his experience and judgment, and above all his exceptional powers to direct and inspire those upon whom the active management of enterprises is laid, have caused him to be sought after as a director by many Canadian companies. Among other directorates of which he is a member may be mentioned The L. H. Packard Co., Limited, The Standard Explosives Co., Foster Rubber Co., of Boston; Rorton Tool and Mill Co. and several mining companies.

The foregoing, however, are small propositions compared with some of Mr. Miner's commercial undertakings. He controls the Hastings Shingle Manufacturing Co., of Vancouver, B. C., with a mill that turns out 600,000 shingles a day, besides which the company operate a very large lumber mill and own and control some of the largest timber properties in British

Columbia. Mr. Miner was instrumental in the formation of the International Coal and Coke Co., owning one of the best equipped coal mines in the Northwest, situated at Coleman, Alberta. The capital of this company is \$3,000,000, and Mr. Miner is its largest stockholder. He is also one of the largest stockholders in the Alberta Coal and Coke Co., which owns some 5,000 acres of hard coal land in Alberta now under development. This company is capitalized at \$2,500,000. He is also at the head of the Granby-Alaska Mining Co., which has very large silver-lead deposits up in Alaska. Perhaps his most important creation, however, was the Granby-Consolidated Mining, Smelting and Power Co., a \$15,000,000 corporation operating copper mines in southern British Columbia, which netted last year more than \$2,000,000 profit. Mr. Miner, although he sold control of this company three years ago, is still one of the largest stockholders.

His connection with the Granby Rubber Co., of course, is well known. The concern was started in 1882 to manufacture rubber clothing. In 1887 Mr. Miner built new mills and appeared in the market with the well known Granby rubber footwear. His factory made from 5,000 to 6,000 pairs of shoes a day, and the company, it is said, made more money in proportion to its output than any of the other Canadian factories. Mr. Miner was also interested in the formation of the Ames-Holden Co., one of the largest jobbing houses in Canada and who are sole selling agents in Canada for Granby rubbers.

It was natural, with all the commercial interests carried by the subject of this sketch, that he should become more or less interested in banking, and he long ago became connected with the Eastern Townships Bank, with head office at

Sherbrooke, Quebec, and with branches in 57 cities and towns throughout Canada. Of this bank, which has a capital of \$4,000,000, Mr. Miner is vice president.

One of the most influential men in Canada, Mr. Miner has always resolutely refrained from accepting political office, although often urged—the single exception being the mayoralty of the town of Granby, which he has held for 20 years past, the place being the location of the Granby Rubber Co., his summer home, and in fact, his town financially and sentimentally. Although he won't take office he is intensely interested in public matters, and often lends efficient help to the passage of laws that he believes will upbuild his country.

Mr. Miner is president of the advisory board of the Congregational College of Montreal, in which he takes a great interest, and which with many other good works and charities he and



SAMUEL HENDERSON CAMPBELL MINER.



Mrs. Miner support with unstinted and unostentatious generosity. Mr. Miner is an enthusiastic Canadian, but yet not a narrow one. Indeed as he has large business interests in the United States he is often in Boston and New York, and keeps in touch with the rubber business as well as anybody in the Americas. Although born in Canada he is from New England stock, his mother being born in Vermont, and while his father was born in Canada, his grandfather was a Connecticut Yankee and a graduate of Dartmouth College.

#### RUBBER IN THE CANADIAN TARIFF.

THE new Canadian customs tariff act, assented to April 12, 1907, involves several changes in the rates applicable to imports of manufacturers of india-rubber and gutta-percha. The language of the several paragraphs relating to these commodities is given below, together with the new rates and those effective under the acts of 1894 and 1897. By way of explanation it may be stated that, in addition to the "general" tariff, special "preferential" rates are provided for the products of Great Britain and certain British dependencies named in the act, and also an "intermediate" rate for the products of other British colonies or possessions or foreign countries under certain conditions, involving reciprocal benefits. It may be noted that Australia does not appear in the list of British countries entitled to the "preferential" tariff. The duties here specified are *ad valorem*:

617. India-rubber boots and shoes. General tariff, 25 per cent.; British preferential, 15; intermediate, 22½.

Rate under the act of 1894—30 per cent. on arctics and gaiters and 25 per cent. on rubber boots and shoes without uppers of cloth or other materials. Rate under act of 1897—25 per cent.

618. Rubber cement and all manufactures of india-rubber and gutta-percha not otherwise provided for. General tariff, 27½ per cent.; British preferential, 15; intermediate, 25.

Rate under the act of 1894—32½ per cent. on belting and 25 per cent. on the other articles. Rate of 1897—20 per cent. on belting and 25 per cent. on unspecified articles.

619. India-rubber clothing and clothing made waterproof with india-rubber; rubber or gutta-percha hose, and cotton or linen hose lined with rubber; rubber mats or matting and rubber packing. General tariff, 35 per cent.; British preferential, 22½; intermediate, 30.

Rate of 1894—35 per cent. on clothing and 32½ per cent. on the other articles named. Rate of 1897—35 per cent. on the whole.

620. Webbing, elastic, over one inch wide. General tariff, 20 per cent.; British preferential, 12½; intermediate, 17½.

Not specified in the preceding tariff acts.

The above comparison may be summarized thus:

Duties unchanged on footwear, clothing, waterproofed cloth, hose, packing, matting and mats.

Duties higher on belting and all other manufactures of india-rubber and gutta-percha not mentioned in the preceding paragraph. [The imports of belting last year amounted to \$40,437 in value, and the goods classed as "All other" to \$414,828, or 51 per cent. of the total imports of rubber goods.]

Under the previous tariff (that is, since July 1, 1898), imports from Great Britain were admitted at a reduction of 25 per cent. from the general tariff. This concession, however, has not given Great Britain a leading position in the Canadian rubber goods trade, as these figures will show—indicating the value of rubber goods imports for the past three fiscal years:

	1904-05.	1905-06.	1906-07.
Total imports .....	\$978,215	\$825,390	\$811,743
From Great Britain.....	334,646	164,996	99,695

Rubber tires are specifically mentioned in the new tariff act—in paragraph 592, which embraces, among other things, "tires of rubber for vehicles of all kinds, fitted or not." The rate is 35 per cent., general tariff, 22½ per cent. British preferential, and 30

per cent. intermediate—the same as named in paragraph 619, already quoted.

#### THE FREE LIST.

Crude materials remain free, as before, paragraph 616 reading as follows: "Rubber and gutta-percha, crude caoutchouc or india-rubber, unmanufactured, powdered rubber and rubber on gutta-percha waste or junk; hard rubber in sheets but not further manufactured, and recovered rubber and rubber substitute."

The following articles are also admitted free:

Seamless cotton or linen duck, in circular form, of a class or kind not made in Canada, for use in the manufacture of hose pipe.

Rubber bulbs for vaccine points.

Fillets of cotton and rubber not exceeding 7 inches wide, imported exclusively for use in the manufacture of card clothing.

Rubber thread, not covered.

Rubber heads for whips.

#### THE SHOE MACHINERY SITUATION.

THE Massachusetts legislature has passed, after a long contest, what is known as the "Shoe Machinery bill," aimed specially at the form of lease in use by the United Shoe Machinery Co., who supply machines and outfits in large numbers to shoe manufacturers.

The new law provides that no person or company shall, after July 1, 1907, make it a condition in the sale or lease of any machine or implement that the purchaser or lessee shall not buy or lease machinery or materials from other persons. But if the owner of any machine shall be protected by patent rights, he may require that any purchaser or lessee thereof shall purchase or lease from him such component parts of the machine as may be required during the continuance of such patents. And nothing in the act shall be construed to prohibit the appointment of agents or sole agents to sell or lease machinery. A violation of this act is punishable for each offense by a fine not exceeding \$5,000.

The number of machines out under lease by this company in the United States on March 1, 1907, was 57,777, an increase for the year of 8,877. The company have also a large factory at Leicester, England, and many machines under lease abroad. The Massachusetts legislation affects conditions only in that state, of course, and does not apply to leases made before July 1. But legislation aimed at restrictive leases is pending in Great Britain, and may be proposed in other of the American states, in case the questions involved shall not first be settled by the United States supreme court in a way to render such enactments without effect.

It does not appear that the Massachusetts law was supported by the shoe manufacturers, with whom an agreement was reached by the Shoe Machinery company several years ago, providing for the form of lease that has since been in force. The Shoe Machinery company opposed the Massachusetts law, as it says, not for fear that it would affect the company injuriously, but on the principle that the industry should be as free from restrictive legislation as possible. The United Shoe Machinery Co., by the way, are practically without competition in their field, so that the restrictive clauses now prohibited have had no effect, because there has been practically nothing to keep out. The Shoe Machinery Company will prepare new forms for leases, likely to involve a higher cost to manufacturers, and a larger income for the company.

The Shoe Machinery Company is embraced in the United Shoe Machinery Corporation, formed under the New Jersey laws May 1, 1905. The latter also controls the companies in England, France, Germany, Switzerland, Australia and Argentina. The earnings last year were \$4,183,000. On June 14 a stock dividend was declared, amounting to 173,000 shares of common stock.

## Two Good Men Retire from the Trade.

THE Boston Rubber Shoe Co. have been deprived during the month of the services of two important members of the administrative force at their factories, by the resignation of Messrs. E. F. Bickford and Frank L. Locke. We have pleasure in presenting herewith portraits of these gentlemen, together with a brief record of their connection with the company.

ERSKINE FRANK BICKFORD, who has resigned the position of manufacturing agent, was born in Woodstock, Connecticut, in 1841. He received a common school education, after which he worked in various capacities until his twentieth year, when he enlisted in the army of his country in the civil war and served with credit for three years, at the end of which time he was captured and confined in the hospital prison at Richmond, Virginia.



ERSKINE F. BICKFORD.

It may be mentioned here that he has since carried somewhere in his sturdy frame a bullet which no surgeon has been able to locate. On being released from prison he went to Annapolis, in the service of the government.

In 1865 Mr. Bickford entered the office of the Boston Rubber Shoe Co., then but a small corporation. It was so small, indeed, that with the help of one assistant he was able to run the office, handle the pay roll, receive the goods, and do the billing. The superintendent at that time was John Robson, the father of John Robson, who is now connected with the company. On the death of the elder Robson he was succeeded by J. B. Sweetland, who was superintendent for about four years, leaving in 1872. During this interval the business has grown considerably and the factory has been enlarged from time to time. On the retirement of Mr. Sweetland, the late Mr. E. S. Converse was for a short time his own superintendent, with Mr. Bickford as an able assistant.

With the continued growth of the enterprise Mr. Converse's time became more and more engrossed in the general management of the business, while upon Mr. Bickford devolved the details of manufacture—a kind of work which he proved himself marvelously adapted to do, as shown in the splendidly organized army of operators who are employed in the great factories at Malden and Melrose.

After the Boston company was merged with the United States Rubber Co. (in 1898) Mr. Bickford was appointed to the position of manufacturing agent of the former company's two factories, the new plan of organization embracing also a general superintendent, with an assistant superintendent for each factory. During the past eighteen years Mr. Bickford has been a member of the board of directors of the Boston Rubber Shoe Co., a position which he still holds.

In addition to his close attention for so many years to the interests of the manufacturing company, Mr. Bickford has found time to serve as a trustee and director in the Malden City Hospital, a director in the Malden Savings Bank, and an active supporter of the Malden Baptist Church. Mr. Bickford is a man of quiet and studious habits, a great reader, conservative to a degree in his methods, and withal strikingly self reliant, and capable of attention to a great amount of detail.



FRANK L. LOCKE.

FRANK LOVERING LOCKE, who has resigned as general superintendent of the factories of the Boston Rubber Shoe Co., to take effect on July 1, was born in the West End in Boston in 1855, attended the public schools, and was graduated from the Phillips Grammar and English High schools. After a year employed in railroad engineering he entered the Massachusetts Institute of Technology, from which he was graduated in 1886 as a bachelor of science. He continued his connection with the Institute for a year, then devoted some time to the engineering department of the city of Boston, going in 1895 to the Boston Rubber Shoe Co., where he was first engaged in the engineering department. He later became assistant superintendent of the company, in charge of Factory No. 1, and on January 7, 1902, was appointed general superintendent,

with an assistant for each of the two factories—the position which he has just resigned.

Mr. Locke has always maintained his interest in the Institute of Technology, has served as president of the alumni, was an organizer of the Technology Club, and is at present a member of the Institute corporation. He was for fifteen years in active service in the Massachusetts Volunteer Militia, from which he retired on account of the pressure of business in 1900, with the rank of Colonel. Mr. Locke has taken an active part as director and treasurer in the Associate Charities of Malden and is a member of the Malden Hospital Corporation. He has been particularly interested, however, in the work of the Boston Young Men's Christian Union, of which he has been a member since 1879, and for almost twenty years active in the board of government, taking part in the most important work of the society. Recently, upon the resignation as president of the Union of Mr. William H. Baldwin, who has served in that position for 39 years, the unanimous choice of the Union for the succession to the office fell upon Mr. Locke, and this accounts for his retirement from connection with the rubber industry. The new position to which Mr. Locke has been called is one for which his connection with the work of the society has fully prepared him, and not least among the qualifications for the new work is the fact that he is a most pleasing public speaker.

## THE SINGAPORE RUBBER WORKS.

THE rubber factory recently established at Singapore, and the first in the Far East [see THE INDIA RUBBER WORLD, June 1, 1907—page 284], it appears from *The Times of Ceylon*, is an outgrowth from the Nederlandsche Guttapercha Maatschappij (Netherlands Gutta-Percha Co.) The latter company has already been mentioned in THE INDIA RUBBER WORLD as having inaugurated a factory in October, 1899, at 19 Passir Panjang, Singapore, for extracting gutta-percha from leaves, under the process of Dr. P. H. Ledebor. This industry not proving profitable, the works have been converted into a factory for making solid rubber tires, valves, and the like. Locally produced rubber is used and the goods made are intended chiefly for local consumption.

Mr. L. A. van Rijn, who was the manager of the gutta-percha company, is in charge of the rubber factory. Mr. H. N. Ridley, director of the Singapore botanic garden, is quoted by *The Times of Ceylon* as saying: "They have found such a demand that they are increasing their works as fast as they can. I have a pair of tires on my trap made at these works from clot and scrap rubber obtained in the Straits, and they are the best rubber tires in Singapore. The best known carriage builder in Singapore is getting tires made in the place. The tires we are getting from home [England] are very poor ones, made of inferior rubber. There are good markets in India and China for the numerous articles such as tires, valves, plates, and so on that are in constant use and which could be supplied cheaper than from home."

A. C. Harper & Co., of Kuala Lumpur, have been appointed agents in the Federated Malay States.

## GERMAN-AMERICAN RECIPROCITY.

THE secretary of the treasury at Washington has notified the customs service, and the consular service has likewise been informed, of a reciprocal commercial agreement between the United States and Germany, announced in a proclamation by the President, accompanied by a copy of the agreement. The agreement becomes effective from July 1, 1907, and is temporary, pending a comprehensive commercial treaty between the two nations. Reduced rates are conceded to Germany on a limited number of articles imported from that country; what was more desired by the Germans is the modification granted in the administration of the customs law, particularly in respect of the valuation of imports. On the other hand, Germany admits a large number of American imports at the rates conceded to "the most favored nation," which in most cases are lower than American products have paid in the past. The official announcement mentions the rates to be charged by Germany on various imports from America, including rubber goods, but an opportunity is not now afforded for presenting a comparison between these and the rates paid hitherto. In general, however, lower rates are accorded to rubber goods. An authority in the American trade estimates that the rate paid on imports of American rubber footwear has worked out at about 25 per cent. *ad valorem*, and that under the new agreement it will amount to 14 per cent.

## OBITUARY.

JOHN A. WALKER, vice president and treasurer of the Joseph Dixon Crucible Co., died at his home in Jersey City, New Jersey, on May 23, in his seventieth year. He was born in New York city, was prepared for college in a private school, chose a commercial career, served his country in the civil war, and in 1867 became connected with Joseph Dixon & Co. A year later the present Dixon corporation was formed, with Mr. Walker as secretary, to which position was gradually added the work of

manager, until 1891, when he was elected to the dual office of vice president and treasurer. Mr. Walker was during all these years a forceful part of the management of the company, contributing in a vital way to its steady development, and his whole career was a continual story of success. In connection with their large production of lead pencils the Dixon company have been extensive users of india-rubber, and for a number of years have operated a rubber factory of their own. Mr. Walker was a director in several important financial institutions, a member of the New York Chamber of Commerce and the Jersey City Board of Trade, and had served as a member of the Jersey City Board of Education and a trustee of the Jersey City Public Library.

## PNEUMATIC CUSHION HEEL.

AN ingenious and valuable development in the line of rubber heels is the Anderson Improved Pneumatic Cushion Heel, covered by patents granted to W. G. Anderson. This heel is not only resilient, but of great comfort to the wearer, since it



PNEUMATIC CUSHION HEEL.

will not slip or carry mud or pick it up. Another claim made for this heel is that it is arch supporting. It is particularly comfortable to feel a soft elastic cushion beneath the arch of the foot. The larger of the illustrations shows the double suction chamber with the cross bar reinforcing the diaphragm. The back of the heel is formed so as to contain an air chamber. The smaller cut more fully illustrates the formation of the cross section of the heel—the tread surface

and the inner chamber as well. When applying the rubber heel to a shoe, the leather must be smoothed off and the contact surface covered with cement. The heel is then nailed to the shoe in the usual manner and as soon as the cement hardens it will be found by pressing on the diaphragm or the cross bar that there is an air-tight chamber underneath which forms a springy soft supporting cushion. Mr. Anderson, when asked where he got his idea of the construction of the suction chamber, replied that it was from seeing a fly walking up a window pane, and realizing that it was wearing a cushion heel. He started to study the fly's foot under a microscope and the Anderson Improved Pneumatic Cushion Heel was the result.

## WANTS AND INQUIRIES.

- (412) WHERE can sheet aluminum for making brands be secured?
- (413) Wanted addresses of firms handling supplies for rubber stamp manufacturers.
- (414) Names of manufacturers of insulating and general rubber machinery who can furnish information regarding the same are wanted by a foreign house.
- (415) Who manufactures or imports pure tar?
- (416) Can seed of "Manicoba" or Ceará rubber be obtained in this country?
- (417) New or second-hand gutta-percha masticator wanted, if in good condition.
- (418) Wanted the address of W. H. Bennett, rubber technologist.



## RUBBER INTERESTS IN EUROPE.

## DUNLOP TYRE DIVIDENDS.

THE rate of dividends of the Dunlop Pneumatic Tyre Co., Limited, for the past business year was reported in THE INDIA RUBBER WORLD May 1, 1907 (page 244). The payments were dated April 8, and the amounts involved were:

On the preference shares (5 per cent).....	£24,874
On the ordinary shares (8 per cent).....	50,000
On the deferred shares (5 per cent).....	24,998

Total for the year..... £99,872

The company paid an *interim* dividend of 5 per cent. on the preference shares on May 1, amounting to £24,824, and have announced for July 1 an *interim* dividend on the ordinary shares amounting to £25,000 and on the deferred shares of £12,500—a total since April of £62,374. The total disbursements, including the yearly dividend, within three months amount to £162,246 [=£789,571.26], not including dividends of £90,940 of the affiliated Dunlop Rubber Co., Limited, declared on April 17.

## CALLENDER'S CABLE AND CONSTRUCTION CO.

THE trading profits of Callender's Cable and Construction Co., Limited, for 1906, were £122,986, or £1,600 less than in the preceding year, which was the best in the company's history. The net profit came out at £54,050 [=£263,224.25], against £51,765 in 1905. The high price of copper has affected the company's business, and their report refers to a "waiting policy" on the part of many of their customers, which is regarded as in keeping with a widespread tendency among consumers of copper to hold off from buying until a lower price level has been reached. The company paid £13,500 in debenture interest (from gross profits), £10,000 in preference dividends, and £26,250 in ordinary share dividends. The company have continued the policy of taking over, wholly or in part, undertakings which widen the company's basis or relieve them to a certain extent of competition. The Anchor Cable Co., Limited, whose works at Leigh, Lancashire, were purchased in 1903, have been completely reorganized, and that acquisition is contributing to the profits of Callender's. They have £42,170 invested in St. Helens Cable and Rubber Co., Limited (Warrington), and £89,320 in other companies. Callender's Bitumen, Telegraph and Waterproof Co., Limited, was formed in 1882 and took its present name in 1896. The capital in the latter year was £200,000—since increased to £375,000, with an issue of £300,000 in 4½ per cent. debentures. The quietness in home business of late has been offset by good orders from the Far East, South America, Mexico and Canada.

## GREAT BRITAIN.

THE business of R. & J. Dick, of the Greenhead Works, Glasgow, manufacturers of gutta-percha and balata goods, and particularly balata belts, has been sold, as from January 1, 1907, by the trustee of the late James Dick, the last surviving partner, to parties who will continue the business under the old name. The brothers Robert and James Dick began business in 1846. The former died in August, 1891, and the latter in March, 1902, each leaving a handsome fortune in addition to their interest in the works.

A new company under the style of Premier Waterproof and Rubber, Limited, will carry on the business purchased from the liquidation of B. Cohen, Limited, waterproof and rubber manufacturers, at the Bromley Works, Ashley lane, Manchester. Hugo W. Hassburger has been appointed managing director, and additional machinery has been laid down. The company was registered May 16, with £50,000 capital, of which £30,000 is in preference shares.

Claudius Ash, Sons & Co. (1905), Limited, report a profit for 1906 of £83,359. The dividend of 5½ per cent. on the preference shares, 3 per cent. on the ordinary shares for the first half of 1906 and 5 per cent. for the second half, amounted to £52,820

[=£257,548.53]. Added to reserve, £17,706. The business is the manufacture and sale of dental rubbers and other dentists' materials.

The appeal of Sirdar Rubber Co., Limited, to the House of Lords, against a judgment given in the court of appeal in 1906, was heard on May 14. The respondents were Wallington, Weston & Co., who it was alleged had been guilty of infringing the appellant's patent for a solid tire (No. 11,686 of 1900), but the judgment given in the appeal court was upheld by the Lord High Chancellor and their lordships.

## GERMANY.

THE Hannoversche Aktien-Gummiwaren-Fabrik, in spite of the long continued strike at their works, were able to pay the usual dividend of 6 per cent. for the last business year, and report good prospects.

Frankfurter Asbestwerke Aktiengesellschaft (formerly Louis Wertheim), at Frankfurt o/M.—Accounts for the ninth business year (1906) show net profits of 100,840 marks [=£24,000]. Dividends, 7 per cent. on the capital of 1,200,000 marks; dividends in the preceding three years, 3, 6 and 5 per cent., respectively.

Vereinigte Gummiwaren-Fabriken Harburg-Wien continue active building operations at Harburg a/d Elbe. Before their fire in October, 1905, drawings had been prepared for the reconstruction of their factory. The destruction of several of the buildings at that time called at once for a large amount of new construction work, which, as it progresses, not only replaces the burned out departments, but carries out the plans for a more modern factory throughout. The success of the Internationale Galalith-Gesellschaft Hoff & Co. has been such as to render necessary a much larger building than has been devoted to it in the V. G.-F. plant, and this building is to be given up to the tire department, and a building for the galalith work, twice as large, erected adjoining the new Harburg docks being constructed as part of the harbor improvements for which the city of Hamburg is expending 57,500,000 marks.

## AUSTRIA-HUNGARY.

OWING to the amalgamation with the Kabelfabrik Aktiengesellschaft (vormals Otto Bondy), of Vienna, of an important wire drawing establishment, the name has been adopted of Kabel-fabrik und Drahtindustrie Aktiengesellschaft. In addition to the manufacture of hard and soft rubber goods and insulated wires, the company will now produce copper, bronze, and steel wires.

## FRANCE.

THE Etablissements Boissac, at Lyons, have assumed the title Société pour l'Exploitation des Procédés Gentzch, or more simply, "Compagnie Gentzch," for the exploitation of the "new gutta-percha" under Gentzsch's patents. The capital is 2,300,000 francs [=£441,900].

Michelin et Cie., of Clermont-Ferrand, are reported to be the owners of a rubber plantation of 1,200 hectares [=2,965 acres], near Baturité, in the Brazilian state of Ceará. The trees are of the "manicoba" species, or *Manihot Glaziouii*.

## ITALY.

PIRELLI & Co., the important rubber manufacturers of Milan, have decided to increase their capital from 7,000,000 to 10,500,000 lire [=£2,026,500], by the issue of 7,000 new shares of 500 lire each.

## SWEDEN.

THE Svenska Gummi-Fabriks Aktiebolaget, makers of mechanical rubber goods at Gislaved, earned a gross profit in 1906 of 95,784 kronen [=£25,670.11] and paid a dividend of 10 per cent. [See THE INDIA RUBBER WORLD, November 1, 1904—page 42.]

## RUSSIA.

THE firm Pychlau & Brant, at Moscow, dealers in technical (mechanical) and surgical rubber goods, has been succeeded by a public company under the same style, with a capital of 400,000 rubles [=£206,000.]

### THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

**T**HE reclaiming plant of The Aladdin Rubber Co., near Barberton, was practically wiped out by fire on June 7, which caused about \$75,000 damage. The origin of the fire has not been ascertained. The \$4,000 Corliss engine and the boiler were not destroyed, but all of the process machinery and about 90 tons of rubber were a total loss. The company began operations in October last and were doing a good business. It is likely that the plant will be rebuilt in Akron where the company have their offices. The company carried considerable insurance.

The B. F. Goodrich Co. are keeping a gang of workmen employed night and day upon the new factory and office building which they are having erected at the corner of South Main and Rubber streets. The office building will be one of the finest structures of the kind in the city.

Referring to a published report that The Diamond Rubber Co. will engage in the manufacture of insulated wire, they state that while they have been figuring upon something of the kind no decision has been reached in the matter.

The Diamond Rubber Co. are erecting a new building in connection with their factory in Akron for the manufacture of the Marsh tire rim which, while they have controlled it for some time past, has been manufactured at Columbus, Ohio, by the Bryant Steel Wheel and Rim Co. As soon as the Columbus plant can accumulate a sufficient supply of stock to permit of the removal of the business to Akron the change will be made.

The Rubber Products Co., operating the plant formerly controlled by the Alden Rubber Co. at Barberton, are making some important improvements in the works, one of the most recent of which was a new press room. The number of the employes have been increased and the company's facilities enlarged considerably.

Alexander Adamson, owner of Adamson's foundry and machine shop, has purchased five acres of land in East Akron, which has given rise to a report that the business which he is conducting in the manufacture of rubber machinery is to be taken over by a large company of which he will remain manager, though as yet nothing definite is to be reported. The Adamson foundry has in hand large orders for hydraulic presses for the Michelin Tire Co.'s factory at Milltown, New Jersey.

Considerable local interest is felt in the French *Grand Prix* automobile contest on July 2, owing to the fact that the car which Walter Christie is to drive will be fitted with Diamond tires.

Mr. Arthur H. Marks, vice president of The Diamond Rubber Co. (Akron, Ohio), has been elected secretary of the Akron Automobile Co., and inaugurated an active campaign looking to the inclusion in the membership of the club every automobile owner in the city. Mr. Charles C. Goodrich, owing to his intended removal from Akron, lately resigned the presidency of the club, being succeeded by Mr. M. Otis Hower. Mr. Fred. Work is vice president and the Hon. George W. Crouse treasurer. Mr. Marks says that this city enjoys the distinction of having more automobiles than any other of its size in the United States. There are 325 licensed cars in Akron, or one for every 200 residents.

Superintendent Freedman, of the Stein Double Cushion Tire Co., has sailed for Europe with the idea of being absent about three months.

### THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

**S**AN FRANCISCO as a city continues to undergo some remarkable experiences. The mayor, Eugene Schmitz, has been convicted of the crime of extortion, which involves imprisonment, and he now awaits sentence. The political "boss,"

Abe Ruef, who was largely responsible for both the rise and the fall of Schmitz, has made a confession of crime and also awaits sentence. Every member of the city's board of supervisors has confessed to bribe taking. Added to the political muddle, the business men have to contend with the hardships which have been occasioned by all sorts of strikes.

While retail business is naturally slow on account of these troubles, and every line of business is inconvenienced, a good thing is the fact that the strikes have not put a stop to activity in rebuilding the city, though the railways have been interfered with in delivering freight, and construction material has sometimes been scarce. There has been a stringency of money, too. But crops on the Pacific coast promise to be unusually big this year, which will put more money in circulation. Bank clearings are surpassing former records; ocean cargoes are larger than ever before; the city is being better administered, and the end of the labor troubles is believed to be in sight. On the whole San Francisco people are taking these disturbances as much as a matter of course as they do their three meals a day, and as somebody in the rubber trade has said, they are getting fat on them.

There has been no change in the management of the Gorham Rubber Co., as might be inferred from some reports that have gone out. Mr. F. S. Sargent is still manager of the establishment; and he reports a degree of activity in trade that would indicate that the rubber branch is one of those least affected by the current troubles.

The Pennsylvania Rubber Co. have taken a ten years' lease on No. 512 Mission street, and contracted for the addition of two stories to the building. Business has been opened with Mr. L. L. Torrey in charge, and several carloads of stock are on their way from the factory. From the San Francisco store branch stores will be operated at Los Angeles and Seattle.

Mr. R. H. Pease, president of the Goodyear Rubber Co., is well satisfied with the situation in the rubber trade. He says that naturally in the summer months trade will be less active, but May this year was the best May they have ever had, and the orders for fall deliveries are larger than ever before at this date. Work is progressing on the new twelve-story building near their old location on Market street, which they expect to occupy before next summer. Mr. Pease and his family will spend the present summer in Portland.

Mr. C. F. Crosby, formerly with the Washington Rubber Co. in Seattle, has come to San Francisco to take a position with the Pacific Tool and Supply Co. He reports the rubber trade at Seattle as active.

The manager of the Pacific Coast Rubber Company, Mr. Norton, states that trade keeps up at its exceptionally brisk pace, and that the outlook, judging from the prosperous condition of the entire State, is that good conditions will prevail during the coming year.

### GUAYULE INTERESTS.

**A** NEW company in the guayule rubber interest is Compañia Guayulera de Torreon, S. A., composed principally of citizens of Torreon, Mexico, where the company have their headquarters and are planning to erect a factory with a capacity for producing 12 to 15 tons of rubber per day. The company are reported to own 858,000 acres of land, on which the guayule plant is abundant, besides which they have contracted for the guayule on the extensive ranch, "La Bahia," owned by General Jeronimo Treviño. Lic. Manuel Garza Adalpe is president of the new company and G. P. Peña secretary. The company will begin business with a capital of \$300,000 (Mexican).

The declared value of guayule rubber exports from Torreon, Mexico, during 1906 totaled \$917,571 (gold), according to the United States consul, against \$125,478 in 1905. Guayule first appeared on the consular agent's records on April 3, 1905.

## News of the American Rubber Trade.

### CHANGES OF OWNERS AT RUTHERFORD.

THE plant of the Electric Rubber Manufacturing Co. (Rutherford, New Jersey) was advertised by the receivers to be offered at public sale on June 7. They received an offer for the property at an earlier date, however, which was accepted by the receivers under the direction of the court, the offer being from F. G. Mott, Jr. (general manager), and others identified with the Trident Tire Co., No. 1593 Broadway, New York. Possession was taken at once, and the manufacture begun of the "Trident," a new puncture proof tire. Title to the Rutherford plant, however, has been taken by a new corporation, The Electric Rubber Co., with \$1,000,000 capital authorized, articles of which were filed under the New Jersey law May 24, 1907, by Walter H. Bond, No. 32 Broadway, New York; William J. Conkling, Orange, New Jersey; and Oscar C. Miller, No. 800 Broad street, Newark, N. J. This company is understood to embrace interests identical with those of the purchasers of the Rutherford plant.

The former owners of the plant were incorporated in November, 1903, as the Electric Rubber Manufacturing Co., and engaged in the manufacture of tires, which was suspended at the end of 1906, when the company became embarrassed and receivers were appointed.

### THE MICHELIN AMERICAN FACTORY.

THE Michelin Tire Co.—the American corporation with \$3,000,000 capital authorized and formed under the laws of New Jersey March 12, 1907, to operate a branch factory of Michelin et Cie. (Clermont-Ferrand, France)—have under construction at Milltown, New Jersey, buildings and equipment designed for an output of 1500 motor tires daily, under the same formulas and processes as are used by the parent company. They advise THE INDIA RUBBER WORLD: "Our buildings and machinery are modern in every respect, no expense being spared to make this the most complete rubber mill in the world. We shall soon be ready to present to the trade Michelin tires made in America." The president of the American company is Monsieur Edouard Michelin, the head of Michelin et Cie. in France, and the vice-president, Monsieur A. Fountaine, formerly at Clermont-Ferrand, is in charge of the new factory.

The Michelin Tire Co. have acquired the factory of the International Automobile and Vehicle Tire Co., incorporated in New Jersey April 15, 1899. The factory was purchased by the latter from the United States Rubber Co., having been that long operated under the name Meyer Rubber Co. The transfer of this property will not be made before the end of summer, but meanwhile the Michelin people are erecting additional buildings.

### MR. PAINE GOES TO LONDON.

THE United States Rubber Co. announced, under date of June 13, that in view of the growth of the company's foreign business, Mr. Eben H. Paine will be located in London as advisory director of the United States Rubber Co., Limited, their English corporation, and have a general supervision of their entire foreign trade. Mr. Paine purposes leaving New York on July 3 to undertake the duties of his new post. Mr. Paine has been connected with the sales department of the United States Rubber Co. since its organization, 15 years ago, but years before that he was interested in the sale of rubber goods. His career in the rubber trade began in connection with the Boston firm of Clapp, Evans & Co., about 35 years ago. In 1877, when the American Rubber Co. was organized by Robert D. Evans, Mr. Paine joined its forces, becoming in the end the general selling agent. He held this position when the United States Rubber Co. came into existence, involving the merger of the American Rubber Co., with Mr. Evans, president of the consolidated companies.

Mr. Paine then removed from Boston to New York, becoming identified with the sales branch of the new and larger corporation. By the resignation of the late Charles L. Johnson as director of sales of the United States Rubber Co., in May, 1897, the position of chief selling agent fell to Mr. Paine, already in charge of the New York selling agency, and this position he has continued to fill up to this time.

From its beginning it has been a settled policy of the United States Rubber Co. to cultivate an export trade along systematic lines, in pursuance of which an European depot was established several years ago in London, and developed finally into a separate public company, the United States Rubber Co., Limited, registered in London February 16, 1905. It is in connection with this company that Mr. Paine transfers the scene of his activity in the trade across the Atlantic, where he has already visited the agencies of his company several times in the past. In this connection it may be mentioned that since the merger with the United States Rubber Co. of the Rubber Goods Manufacturing Co., the sale of the mechanical and kindred rubber goods products of the latter has been carried on under the style The Anglo-American Rubber Co., on Holborn viaduct, London, and presumably Mr. Paine will be expected to devote part of his energies to the latter enterprise.

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THE position vacated by Mr. Paine's transfer has been filled by the appointment of Mr. Edward R. Rice as manager of sales in charge of all sales, including the branch store department, which has been in Mr. Rice's hands hitherto. All selling departments will be under the direction of a committee on sales composed of Homer E. Sawyer, chairman; Lester Leland, Walter S. Ballou, John J. Watson, Jr., Henry B. Hubbard, secretary.

### NEW TIRE TUBE FACTORY.

THE VICTOR Auto Tire Repair Co. (Passaic, New Jersey) will be operated hereafter under the name The Victor Auto Tire and Tube Co., the change in title making their entrance into the manufacture of inner tubes. For this purpose they have acquired premises in Waterhouse's Mills. The company also manufacture repair stock and continue to repair and retread pneumatic tires. The company were incorporated October 18, 1906. James Maitland is manager and Samuel W. Hall secretary.

### AN AMERICAN BRANCH OF CLAUDIUS ASH.

A NEW factory for the production of dental rubbers has been established, being a branch of the important English corporation, Claudius Ash, Sons & Co. (1905), Limited. The American office is at No. 30 East Fourteenth street, New York, and the factory at Irvington (near Newark), New Jersey. The original business of Claudius Ash & Sons, manufacturers of dental materials, was formed in 1825. It expanded in time into two businesses, one manufacturing and one mercantile, which in 1905 were combined in one public company, capitalized at £1,000,000 [= \$4,866,500]. At that time the profits for the three years preceding were reported to have averaged £71,581 [\$348,349] per annum, covering the manufacture and sale not only of dental rubbers, but of dental materials of all kinds. The American branch factory has been inaugurated under the supervision of the managing director in charge of the English factory.

### A RUBBER STORE AT SPOKANE.

THE Washington Rubber Co., Inc., are building a modern structure containing about 25,000 feet of floor space to accommodate a stock of merchandise which they have arranged to carry at No. 708 Main avenue, Spokane, Washington. The company are selling agents for the Pacific Coast Rubber Co. and the



business in the Spokane territory has been handled formerly through the company's other Pacific coast stores. Owing to the increase of business in that territory it is now considered necessary to put in a first class stock at Spokane.

#### BOSTON RUBBER SHOE CO.'S AFFAIRS.

THE report of condition filed by this company as of March 31, 1907, with the Massachusetts state authorities, with the corresponding figures for the preceding year, is as follows:

ASSETS.		March 31, 1907.	March 31, 1906.
Real estate.....	\$768,525.00	\$768,525	
Machinery .....	375,515.06	375,515	
Merchandise and stock in process....	4,394,856.51	3,540,003	
Cash and debts receivable.....	1,932,444.34	2,041,384	
Patent rights.....	2,000.00		
Special contract U. S. Rubber Co....	4,800,000.00	4,800,000	
Miscellaneous .....	16,670.00	16,630	
Total .....	\$12,290,010.91	\$11,542,047	
LIABILITIES.			
Capital stock.....	\$5,000,000.00	\$5,000,000	
Accounts payable.....	706,146.11	428,114	
Funded debt.....	4,800,000.00	4,800,000	
Floating debt.....	650,000.00		
Interest on bonds not due.....	40,000.00	40,000	
Profit and loss.....	1,093,864.80	1,273,933	
Total .....	\$12,290,010.91	\$11,542,047	

#### WOONSOCKET RUBBER CO.'S AFFAIRS.

THE report of condition of the Woonsocket Rubber Co., filed with the Massachusetts authorities as required of all corporations doing business in that state, for the year ending March 30, 1907, compared with the figures for the preceding year, is as follows:

ASSETS.		1907.	1906.
Real estate.....	\$887,218	\$897,543	
Machinery .....	281,745	292,842	
Material .....	2,918,842	2,429,542	
Cash and debts receivable.....	152,714	324,322	
Adjustment of inventory.....	1,198,994	1,198,984	
Loans receivable.....	1,800,000	1,800,000	
Miscellaneous .....	1,178		
Total .....	\$7,240,691	\$6,943,233	
LIABILITIES.			
Capital stock.....	\$3,000,000	\$3,000,000	
Accounts payable.....	631,927	185	
Special debt.....	1,800,000	1,800,000	
Surplus fixed.....	1,613,900	1,613,900	
Profit and loss.....	194,864	529,148	
Total .....	\$7,240,691	\$6,943,233	

#### AMERICAN RUBBER CO.'S AFFAIRS.

THE report of condition filed as of March 31, 1907, by the American Rubber Co. (Boston), with the Massachusetts commissioner of corporations, as required by law, embraces the following details:

ASSETS.		LIABILITIES.	
Real estate.....	\$188,008.22	Capital .....	\$1,000,000.00
Machinery .....	136,927.22	Accounts payable..	34,938.79
Merchandise .....	1,813,843.27	Special bills payable	600,000.00
Cash and receivables	668,989.25	Floating debt.....	200,000.00
Special bills rec'ble	600,000.00	Surplus .....	865,784.01
Miscellaneous ....	7,915.17	Profit and loss....	714,960.33
Total .....	\$3,415,683.13	Total .....	\$3,415,683.13

#### THE ROSENDALE-REDDAWAY COMPANY.

AN addition is being made to the plant of The Rosendale-Reddaway Belting and Hose Co., Limited (Newark, New Jersey), in the shape of a two-story building, 50x100 feet, to be used for drying purposes. The company makes "Camel Hair" belting, and also stitched canvas belting and linen fire hose, but no goods into which rubber enters. Mr. Francis Reddaway, of

F. Reddaway & Co., Limited, of Manchester, England, is individually a shareholder in this company and chairman of its board, but otherwise it has no connection with the Manchester firm. The company dates from a visit made by Mr. Reddaway to America some 15 years ago.

#### THE RUBBER TIRE TRADE IN TEXAS.

THE Appel & Burwell Rubber and Tire Co. (Dallas, Texas), formed in October, 1905, has a well-equipped vulcanizing plant, and facilities for not only mending ordinary tire repairs, but retreading or completely rebuilding casings. Their plant is referred to as the only one of the kind in the Southwest. The territory is large, but not yet much developed in the automobile line. There are about 250 cars in Dallas, however, and the number is expected to double within a year. There are a number of stage lines in the western part of Texas which operate from two to twenty motor cars each, equipped with rubber tires. The firm are Southwestern representatives for the International Rubber Co. (Milltown, New Jersey), and carry a wholesale stock of automobile tires, bicycle tires, and solid rubber tires. They employ a traveling salesman.

#### J. SCHNURMANN'S AMERICAN AGENCY.

FELIX SALOMON & Co., No. 140 Nassau street, New York, have been made sole agents for the United States and Canada by J. Schnurmann, a prominent rubber scrap dealer of Downham Mills, London. With a view to beginning his representation in this country in an active manner Mr. Schnurmann has sent Mr. Weber from his office to join the Messrs. Salomon for a few months, to aid in placing various propositions regarding waste rubber before dealers and manufacturers.

#### ACKER PROCESS CO. TROUBLES.

IN the matter of Acker Process Co., bankrupt [see THE INDIA RUBBER WORLD, June 1, 1907—page 291], the trustee of the estate has made petition to be allowed to offer at public sale the several patents issued to C. E. Acker. The referee in bankruptcy, E. A. S. Man, will grant a hearing on the petition on July 1, at No. 1 Montgomery street, Jersey City. A meeting of creditors is called for the same time. The trustee reports in hand \$175,368.65 and a first dividend of 5 per cent. for the creditors is suggested.

#### ELECTRICITY IN A MALDEN FACTORY.

THE Boston Rubber Shoe Co. have decided to establish at their Edgeworth factory one 350 kilowatt 600 volt alternating current generator, to be used for power. It will be driven from one of their cross compound engines which is not loaded to full capacity. The current will be used to operate their washing mills, dye house, machine shop, and printing office, all of which are located at some distance from their existing power plant, and also the Malden Last Co. factory. A local electric company has been contracted with for a certain amount of current for use while the new apparatus is being installed. It is these plans which, doubtless, have given rise to mistaken reports that the Boston Rubber Shoe Co. purpose introducing electricity for running their factories.

#### MARTIN-EVANS CO.

THE Martin-Evans Co. was mentioned in the last INDIA RUBBER WORLD (page 290) as succeeding the New York-Broadway Rubber Tire Co., but the change is only in name. The interests in the new company are identical with those of the old. The change of name was thought advisable on account of the company going into automobile supplies, and no longer confining itself exclusively to tires. The company will continue to handle the New York-Broadway brands of solid tires (internal and side wire) and "Tourist" inner tubes; also, the products of the Firestone Tire and Rubber Co. (Akron, Ohio). The company has a large pneumatic tire repair shop and facilities for applying solid tires, at No. 1186 Bedford avenue, Brooklyn, and maintains a New York office at No. 256 Broadway.

## UNITED STATES RUBBER CO.—SHARE ISSUES.

THE governing committee of the New York Stock Exchange on June 12 listed 8,000 additional shares of the first preferred stock of the United States Rubber Co., and granted an extension of time to November 1, 1907, in which to list, under authorizations already granted, 24,139 additional shares first preferred stock and 1,514 shares additional second preferred stock. The following is a summary of the stock issues of the United States Rubber Co.:

**First preferred.**—Authorized by the charter, \$40,000,000; issued and listed on the Stock Exchange, \$36,263,000; total amount authorized by the Exchange to be listed, to date, \$38,676,900.

**Second preferred.**—Authorized by the charter, \$10,000,000; issued and listed, \$9,848,600; authorized by Exchange to be listed, \$10,000,000.

**Common.**—Authorized by charter, \$25,000,000; issued, the whole amount; listed, \$23,666,000. The remainder of this issue (13,340 shares) is in the treasury of the Meyer Rubber Co., a subsidiary company.

The 8,000 additional shares last listed were the remainder of a block of 58,000 shares of first preferred stock held by the Meyer Rubber, details regarding which appeared in THE INDIA RUBBER WORLD April 1, 1906 (page 221). A report to the Stock Exchange stated: "Said Meyer Rubber Co. has sold said 8,000 shares on the basis of \$100 per share, or for the sum of \$800,000, which sum has been received in cash in its treasury for its corporate purposes and ultimately for the corporate purposes of the United States Rubber Co."

It may be of interest to recall, in connection with the \$2,413,900 of additional first preferred shares the date for listing which has been extended to November, a statement in the last annual report of the president of the United States Rubber Co.: "There is about \$3,000,000 of the preferred stock of the Rubber Goods company still unexchanged, as to which your directors have thought it as well to take no action, at least for the present."

## NEW ENGLAND RUBBER CLUB.

THE annual summer outing of the New England Rubber Club will be held on July 17 at the Country Club, Brookline, Mass. This exceedingly exclusive club opens its doors and gives over its golf links, baseball grounds, tennis courts, and broad reaches of woods and fields to the New England Rubber Club as an appreciation of President Stedman, one of the Country Club's most prominent and popular members. The whole of the Country Club belongs to the New England Rubber Club on the day mentioned, with the exception of the portion of the clubhouse that is always reserved for the lady relatives of the club members. A circular giving full information regarding the outing, transportation, sports, and so on, will be mailed by the secretary to all members of the New England Club in due time.

## FACTORY TRAFFIC MANAGERS ORGANIZE.

THE traffic managers of a number of large manufacturing concerns in Hampden county, Massachusetts, have organized the Hampden County Traffic Association, with headquarters at Springfield, for the mutual promotion of their interests as shippers. The executive committee includes F. R. Lyman, traffic manager of The Fisk Rubber Co. (Chicopee Falls), whose work last year [see THE INDIA RUBBER WORLD, June 1, 1906—page 301] in connection with the classification of pneumatic tires as freight on railways resulted in a material reduction in rates on such goods over a considerable part of the country.

## A TRAINLOAD OF RUBBER SHOES.

THE Apsley Rubber Co. (Hudson, Massachusetts) recently made a shipment of rubber footwear to their Chicago agents, M. D. Wells Co., which filled a train of ten cars of the Boston and Maine railroad. A photograph was made of the train, each car labeled with the company's name, with the factory appearing in the background. The company have had made from this a "half tone" picture 42 inches in length which gives a far

better idea than any mere statistics of the large scale on which the rubber shoe trade is conducted. It is stated that the deliveries due the Chicago agents would fill four more similar trains.

## A NEW TALC MILLING PLANT.

THE Massachusetts Talc Co., Inc. (Boston), extend an invitation to purchasing agents for rubber factories to visit their new milling plant, recently completed at Zoar, Massachusetts, on the Fitchburg division of the Boston and Maine railroad. The company have now been mining talc for something less than two years, but they have already added a large number of rubber manufacturers to their list of customers. Their new mill has a daily capacity of 40 tons of high grade domestic talc or soapstone.

## GOODYEAR TIRE AND RUBBER CO. AGENCIES.

THE Goodyear Tire and Rubber Co. (Akron, Ohio) have established a sales branch at Pittsburgh, at No. 5988 Center avenue, in charge of Mr. C. A. Vetter. They have also opened a new branch in Philadelphia, known as the Goodyear Tire Agency, at No. 1404 Ridge avenue, in charge of Mr. L. S. Hall.

## HARTFORD RUBBER WORKS CO.

H. E. FIELD, formerly manager of this company's branch at Detroit, Michigan, having been appointed sales manager of the company, with headquarters at Hartford, has been succeeded at Detroit by C. W. Hatch. Walter Clapp, Jr., has been appointed branch manager at Buffalo, New York, to succeed George Ostendorf. A. W. Kirk, who formerly traveled for the company in the South, is opening a store in Atlanta, Georgia, at No. 55 Auburn avenue, and will be the company's representative in that city.

## OWED \$38,478 FOR RUBBER TIRES.

SCHEDULES in bankruptcy of the E. J. Willis Co. (New York), against whom a petition in bankruptcy was filed on April 16, show liabilities of \$174,042, of which \$12,114 are secured, and good assets of \$52,214, besides \$28,426 in accounts mainly disputed and considered uncollectable. The creditors include four rubber tire manufacturers, with claims amounting to \$38,478. It is thought that the company may be able to compromise with their creditors and continue business.

## TRIBUTE TO ARTHUR W. CLAPP.

At a meeting of the board of directors of the Rubber Manufacturers' Mutual Insurance Co., in Boston, the following tribute to the late Arthur Winship Clapp, at the time of his death president of the company, was ordered spread upon the company's minutes:

THE sad news of the sudden death on April 17 last of our honored President, Arthur Winship Clapp, came as a great shock and profound sorrow to the directors of the Rubber Manufacturers Mutual Insurance Co.

Entering the board of directors in January, 1894 (in succession to his elder brother, the late Eugene H. Clapp, who was one of the founders of the company and its first vice president), he at once by his intelligence and grasp of affairs, by his uprightness and force of character, and by his tact and knowledge of men, took a prominent part in our deliberations and decisions; and his unanimous elevation to the presidency of the company followed most naturally in July, 1904, upon the vacancy for the first time in our history in that office.

During these thirteen years he has served our interests with the greatest zeal, enthusiasm, and loyalty combined with a thorough knowledge of our company's affairs and perfect fearlessness and frankness in meeting the many questions which came up from time to time for our consideration.

As none of his fellow directors had any intimation of his failing health, the sense of our loss and the shock we now experience are all the more profound and distressing, and we wish to record, however inadequately, our testimony to his fine qualities of head and heart and to our great personal regard for him as a loyal friend and co-worker.

Voted that this testimonial be spread upon the records of the company, and that a copy be sent to his family, to whom we tender our warmest sympathy in their great sorrow.

GEORGE H. HOOD,  
GEORGE B. HODGMAN,  
ROBERT BATCHELLER,  
Committee.

BOSTON, May 7, 1907.

## ADVERTISING A CITY.

THE city of Memphis is demonstrating that it may pay a city as well as a business house to advertise liberally, which it has been doing through the local Industrial League, now in its sixth year. The League claims to have been the means of locating in Memphis 86 factories, capitalized at \$22,920,000, and giving employment to 10,000 people. The League recently elected as president Mr. H. N. Towner, the head of Towner & Co., Inc., jobbers of rubber goods and mill supplies at Memphis, and one of the largest houses in this field in the whole South.

## ALUMINUM FLAKE CO.—ELECTION.

At the annual meeting of shareholders of the Aluminum Flake Co. (Akron, Ohio, June 8), the following directors were elected: R. M. Wanamaker, Frank Reifsnider and W. E. Young, Akron, Ohio; W. H. Hoover, New Berlin, Ohio; and C. K. Reifsnider, St. Louis. C. K. Reifsnider was elected president, Frank Reifsnider vice president and general manager, Mr. Young secretary, and N. P. Goodhue treasurer. The company are engaged in marketing supplies for the rubber trade.

## CANADIAN RUBBER CO. NOT ABSORBED.

UNDER this head the New York *Sun* prints a Montreal despatch, dated June 25, as follows: "George W. Stephens, president of the Canadian Rubber Co., gives an emphatic denial to the report that the United States Rubber Co. has secured control of the Canadian Consolidated Rubber Co. 'The United States Rubber Co.,' said Mr. Stephens, 'has not bought a share of stock in the Canadian concern and has not a cent's worth of interest in it.'"

## TRADE NEWS NOTES.

THE Hon. Arthur H. Lowe, of Fitchburg, Massachusetts, a member of the board of directors of the Rubber Manufacturers' Mutual Insurance Co., at a meeting of the board in Boston, on June 4, was elected to the office of president, to succeed the late Arthur W. Clapp.

Mr. John J. Watson, Jr., treasurer of the United States Rubber Co., is scheduled to make an inspection trip of the plants and agencies of the company, extending as far west as the Pacific coast, and consuming the present month and the first half of August.

The Broadway Rubber Tire Works, at No. 1900 Broadway, New York, are engaged in the repairing of automobile tires, besides which they deal in tires, holding agencies for both domestic and foreign makes.

Ajax-Grieb Rubbers Co. (Trenton, New Jersey) are putting a line of bicycle tires on the market—single tubes, branded with the makers' name.

The Electric Cable Co. (New York) are contemplating an addition to their plant at Bridgeport, Connecticut, to be erected probably next fall. It will be devoted to the manufacture of rubber insulated wires, which they intend beginning soon in their present buildings. The company was organized early in 1906 to manufacture "Volutax," a non-rubber insulation material.

The treasury department announces a regulation allowing a drawback on the exportation of golf balls made by the Goodyear Tire and Rubber Co. (Akron, Ohio), with the use of imported spun silk, equal in amount to the duty paid on the imported material used, less 1 per cent.

C. S. Pelton has become manager of the Buffalo branch of the Pennsylvania Rubber Co., succeeding Fred Roblin, who was temporarily in charge and has returned to the motor tire department of the Pennsylvania company's factory.

The Akron Pneumatic Tire and Protector Co. has been organized, at Akron, Ohio, for marketing the pneumatic tires patented by Lemon Greenwald, of that city.

Clark-Hutchinson Co. (Boston and New York) send out an extensive and interesting catalogue of leather and rubber footwear—for the spring of 1907—covering a great variety of goods, including a number of items for women's wear, fitted with rubber heels.

## TRADE NEWS NOTES.

THE directors of the United States Rubber Co. have created the position of secretary to the president and elected to that position Mr. John D. Carberry, who for several years has performed the duties now pertaining to it.

Mr. Isaac B. Markey has been elected a vice president of the Eureka Fire Hose Co. (New York), with which he has been connected for 23 years, having filled for several years the office of secretary.

Mr. William W. Wildman, who had charge of the operation of the Milwaukee Rubber Works Co.'s plant as representative of the Milwaukee Trust Co. during the receivership, for some 13 months, made an excellent showing in putting the factory upon a paying basis and building up a surplus that was very welcome to the creditors. The articles of incorporation of the Federal Rubber Co., the recent purchasers of the Milwaukee plant, were filed May 9, 1907, under the laws of Wisconsin.

At a special meeting of the directors of the Joseph Dixon Crucible Co., held May 31, at Jersey City, New Jersey, to take action on the death of Vice President and Treasurer John A. Walker, George T. Smith was elected vice president, George E. Long treasurer, and Harry Dailey was elected director and secretary.

The annual meeting of the shareholders in the Tehuantepec Rubber Culture Co., incorporated under the laws of New Jersey, was held in Jersey City on June 18.

Nazarro, who finished second in 1906 in the Automobile Club of France *Grand Prix*, will drive a F. I. A. T. car, with Michelin tires in this year's *Grand Prix*.

W. K. Philp, until recently at the factory of G & J Tire Co. (Indianapolis), has been appointed manager of that company's New York branch, succeeding Arthur T. Smith, resigned.

## PERSONAL MENTION.

MR. ROBERT D. EVANS, formerly president of the United States Rubber Co., has been elected a trustee of the Boston Museum of Fine Arts. Mr. Evans is an enthusiastic art collector, and is the owner of what is regarded as one of the finest private galleries in Boston.

Colonel Samuel P. Colt, president of the United States Rubber Co., was recently at his camp at Mt. Katahdin, Maine, on account of ill health, and is now expected to sail for Europe early in this month, with his brother, Judge Le Baron B. Colt, of the United States Court. Colonel Colt has announced his withdrawal as a candidate for the position of United States senator for Rhode Island.

The citizens of Granby, Quebec, on the return of Mr. and Mrs. S. H. C. Miner from Montreal, where they usually spend the winter, tendered them a reception at the Town Hall, which was largely attended. The town owes much to the business ability of Mr. Miner, to whom it is largely indebted for its rubber and other manufacturing plants, and for years he has served as mayor.

At Easthampton, Massachusetts, on Wednesday evening, June 5, Miss Mollie, daughter of Mr. and Mrs. Franklin W. Pitcher, was married to Mr. Harry Slocum Lewis. Mr. and Mrs. Lewis will be at home after September 2 at Beaver Falls, New York.

Dr. Friedrich Traun, of Dr. Heinrich Traun u. Söhne (pro-prietors of the Harburg Rubber Comb Co.), of Harburg and Hamburg, was a recent visitor to the United States. Also Herr A. Hoff, of the management of the Vereinigte Gummiwaren-Fabriken Harburg-Wien, of Harburg.

## MR. SCHEEL RETURNS TO MAIDEN LANE.

WILLIAM H. SCHEEL, supplier of materials for the rubber manufacture, whose premises at No. 158 Maiden Lane, New York, were burned in April last, and who has meanwhile occupied temporary quarters, returns on July 1 to the old location. All the lines previously handled will be afforded to the trade from new stocks now in hand, or arriving.



## NEW MANAGER FOR THE BOSTON WOVEN HOSE.

THE Boston Woven Hose and Rubber Co. have selected, as their new general manager, Mr. George E. Hall, of Watertown, New York, who has made a reputation in the paper trade both as manufacturer and organizer. Mr. Hall was born in Brattleboro, Vermont, August 2, 1868; was educated at the public schools, and at the age of 22 started to learn the paper manufacturing business, beginning at Howland, Maine, with N. M. Jones. From there he went to take charge of the J. & J. Rodgers Co.'s paper mill at Au Sable Forks, N. Y., which position he filled for some six years, during which time he thoroughly familiarized himself with all of the details of paper manufacture and mastered the problem of the preparation of sulphite. A few years later he connected himself with the International Paper Co., being assistant manager of manufacture and sulphite

expert. This gave him the general supervision of the great sulphite department of the "paper trust," and in this position he showed special aptitude as an organizer and manufacturer, effecting many economies and substantially improving the efficiency of his department. In 1904 he accepted a position as secretary of the St. Regis Paper Co. and Taggart's Paper Co. at Watertown, N. Y., in both of which companies he was financially interested. Here he gave his attention to the manufacturing end and also took an active part in the sales department. Mr. Hall was vice president of the news division of the American Pulp and Paper Trade Association, and is well known and highly esteemed throughout the whole paper trade. He is young, active, and efficient, and while he says of himself that "his knowledge of rubber could be written on the back of a postage stamp," his manifest ability is sure to make itself felt in his new position.

## Review of the Crude Rubber Market.

THE market remains quiet. Manufacturers are out of the market to a great extent, but there is no particular pressure of stocks. Prices have declined still further since our last report, reaching finally the level of March, 1904, but at the close of the month the market is firm at the quotations given below. The arrivals at the mouth of the Amazon for the crop year are in excess of the most liberal predictions for the season. The figures for the year last closed (with the last two or three days of June estimated), compared with former years, have been as follows:

Years .....	1906-07	1905-06	1904-05	1903-04	1902-03
Tons .....	37,925	34,490	33,060	30,580	29,850

Arrivals at Antwerp (mainly from the Congo) are slightly smaller since January 1 than in previous years, and there appears to be no increase of production in any quarter except in Mexican guayule rubber.

Following is a statement of the prices of Pará grades, one year ago, one month ago, and June 28—this date:

PARÁ.	July 1, '06.	June 1, '07.	June 28.
Islands, fine, new.....	120 @ 121	110 @ 111	104 @ 105
Islands, fine, old.....	none here	none here	none here
Upriver, fine, new.....	124 @ 125	112 @ 113	110 @ 111
Upriver, fine, old.....	125 @ 126	114 @ 115	112 @ 113
Islands, coarse, new.....	64½ @ 65	62 @ 63	61 @ 62
Islands, coarse, old.....	none here	none here	none here
Upriver, coarse, new.....	90 @ 91	87 @ 88	87 @ 88
Upriver, coarse, old.....	none here	none here	none here
Caucho (Peruvian) sheet.....	72 @ 72½	71 @ 72	70 @ 71
Caucho (Peruvian) ball.....	84 @ 85	83 @ 84	82 @ 83
Ceylon, fine, sheet.....	148 @ 149	134 @ 135	127 @ 128

## AFRICAN.

Sierra Leone, 1st quality .....	94 @ 95	Lopori ball, prime.....	102 @ 103
Massai, red.....	94 @ 95	Lopori strip, prime.....	96 @ 97
Benguella.....	72 @ 73	Madagascar, pink.....	82 @ 83
Accra flake.....	18 @ 19	Ikelemba .....	none here
Cameroon ball.....	74 @ 75	Soudan niggers.....	85 @ 86

## CENTRALS.

Esmeralda, sausage.....	82 @ 83	Mexican, scrap.....	81 @ 82
Guayaquil, strip.....	68 @ 69	Mexican, slab.....	62 @ 63
Nicaragua, scrap.....	78 @ 79	Mangabeira, sheet.....	58 @ 59
Panama, slab.....	62 @ 63	Guayule .....	46 @ 47

## EAST INDIAN.

Assam .....	93 @ 94	Borneo .....	38 @ 39
Late Pará cables quote:			
Per Kilo		Per Kilo.	
Islands, fine.....	58 @ 59	Upriver, fine.....	65 @ 66
Islands, coarse.....	28 @ 29	Upriver, coarse.....	45 @ 46
		Exchange .....	15 3-16d.

## Latest Manãos advices:

Upriver, fine.....	65 @ 66	Upriver, coarse.....	45 @ 46
		Exchange .....	15 3-16d.

## Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		Total.		Total.	
	Fine and Medium.	Coarse.	1907.	1906.	1907.	1905.
Stocks, April 30.....	236	41 =	277	386	611	
Arrivals, May.....	596	579 =	1175	1194	463	
Aggregating .....	832	620 =	1452	1580	1074	
Deliveries, May.....	528	555 =	1083	1293	496	
Stocks, May 31.....	304	65 =	369	287	578	
	PARÁ.		ENGLAND.			
	1907.	1906.	1907.	1906.	1907.	1905.
Stocks, April 30.....	510	267	496	950	1280	355
Arrivals, May.....	1765	1420	1660	910	555	815
Aggregating .....	2275	1687	2156	1860	1835	1170
Deliveries, April.....	1670	1597	1791	800	775	800
Stocks, May 31.....	605	90	365	1060	1060	370
World's visible supply, May 31.....	3,091	2,078	2,143			
Pará receipts, July 1 to May 31.....	30,460	27,584	26,326			
Pará receipts, Caucho, same dates.....	5,960	5,245	5,004			
Afloat fr. Pará to United States, May 31.	202	190	125			
Afloat from Pará to Europe, May 31....	835	451	705			

## Liverpool.

WILLIAM WRIGHT & Co. report [June 1]:

*Fine Pará.*—Under the combined influence of a dull demand from the trade and heavy receipts, prices, especially during the last week, have declined rapidly. The total decline for the month is about 3½d. per pound, and at the close prices seem likely to go still lower, although it often happens that a rapid decline is followed by an equally rapid advance. There is a general impression that there is a good deal of undeclared stock. This, in conjunction with the increase in the crop, will doubtless show a trend of prices in buyers' favor.

EDMUND SCHLUTER & Co. report [May 31]:

There is little doubt that the large increase of supplies from the Amazon during February-May has proved to be in excess of requirements, and that under these circumstances a decline was almost inevitable. It is at present an open question whether the market has found a level, but it must be borne in mind that the excess of supply this season is estimated to contain some 1,500 tons of the 1905-06 season, while reliable reports from Brazil say that all the rubber collected during the present season has come down

## Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots, per pound—show no change:

Old rubber boots and shoes—domestic.....	12 @ 12½
Old rubber boots and shoes—foreign.....	10¾ @ 11
Pneumatic bicycle tires.....	7½ @ 7¾
Automobile tires .....	9¾ @ 10
Solid rubber wagon and carriage tires.....	10 @ 10½
White trimmed rubber.....	12½ @ 12¾
Heavy black rubber.....	5¾ @ 6
Air brake hose.....	4¾ @ 5
Fire and large hose.....	3¾ @ 3¾
Garden hose .....	2½ @ 2¾
Matting .....	1½ @ 1¾

to the Amazon shipping ports. It is, therefore, reasonable to expect no repetition in 1907-08 of a large increase of the crop and, given in normal development of consumption, the weight of the present stocks may be less acutely felt during the month to come, and a more steady market follow the present depression.

#### WORLD'S VISIBLE SUPPLY OF PARA, MAY 31.

	1907.	1906.	1905.	1904.	1903.	1902.
Tons	4733	3363	2908	2036	3656	4362
Prices, hard, fine.	4/7½	5/3¼	5/8½	4/10	3/10¼	3/-

#### LIVERPOOL STOCKS OF AFRICAN RUBBER, MAY 31.

	1907.	1904.	1905.	1901.	1902.
1907.	330	567	1901.	852	
1906.	367	330	1900.	834	
1905.	390	592	1899.	605	

#### Plantation Rubber From the Far East.

##### WEEKLY EXPORTS—CEYLON PRODUCT.

	Pounds.	Total, 1907.	Pounds.
Jan. 1 to April 8.	93,828	160,675	
Week ending April 15.	21,054	Same dates, 1906.	95,113
Week ending April 22.	5,033	Same dates, 1905.	37,016
Week ending April 29.	25,357	Same dates, 1904.	28,643
Week ending May 6.	15,353		
Week ending May 13.	50		

##### Distribution.

	Pounds.	Total.
Great Britain.	106,640	1,820
United States.	41,467	799
Germany.	9,837	112

Total exports of plantation rubber from Ceylon to May 13, including Straits and Malayan produce, 234,865 pounds.

##### EXPORTS FROM THE STRAITS.

[January 1 to April 20, 1907.]

	Pounds.	Total.
Great Britain.	343,467	7,867
Europe.	23,334	45,867
United States.		
Japan.	15,167	435,702

[From Singapore, 396,235; from Penang, 39,467.]

Exports of plantation rubber from the Straits in 1906 reached 1,046,511 pounds, of which 1,028,792 was credited to three of the Federated Malay States (Pahang not yet exporting). The same states exported in January and February, 1907: Selangor, 143,665 pounds; Negri Sembilan, 62,039; Perak, 39,160; total, 244,864.

##### AT THE AUCTIONS.

ANTWERP, May 23.—Sales included 5,163 kilos of Straits Settlements crepe, at prices ranging from 11.75 to 15.82½ francs [= \$1.21½].

LONDON, June 7.—About 40 tons offered at auction to-day, but

in view of the lack of activity in bidding about two-thirds was "bought in." The highest price paid was 5s. 8d. [= \$1.37¼], for washed worm from Gikiyana Kande estate. Fine pale biscuits realized up to 5s. 5d. [= \$1.31¼]. Highest price to-day for hard fine Para, 4s. 7d. [= \$1.11½]. Highest price one year ago for plantation, 6s. 1½d. [= \$1.49]; highest price for Para, 5s. 3d. [= \$1.27¼]. To-day's sales included 3 cases *Castilloa* plantation rubber from the West Indies, not in the best condition, at 3s. 6d. [= 85 1-6 cents].

#### IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weight in Pounds.]

MAY 27.—By the steamer Gregory, from Manáos and Pará:	Fine.	Medium.	Coarse.	Caucho.	Total.
General Rubber Co.	97,000	23,600	127,500	42,700	290,800
A. T. Morse & Co.	14,600	4,000	95,600	53,500	167,700
Poel & Arnold	16,100	5,600	60,700	28,200	110,600
New York Commercial Co.	47,800	14,200	17,000	5,700	84,700
Neale & Co.	5,500	1,700	32,900	13,400	53,500
Edmund Reeks & Co.	13,500	2,800	3,400	2,700	22,400
Hagemeyer & Brunn.	9,600		9,900		19,500

Total 204,100 51,900 347,000 146,200 = 749,200

JUNE 3.—By the steamer Dunstan, from Manáos and Pará:	Fine.	Medium.	Coarse.	Caucho.	Total.
General Rubber Co.	59,000	17,500	52,400	89,100	218,000
A. T. Morse & Co.	41,400	19,200	40,900	12,600	114,100
Poel & Arnold	36,400	5,500	35,300	37,800	115,000
C. P. dos Santos	18,000	1,400	6,600	18,500	45,400
Hagemeyer & Brunn.	23,200		9,200		32,400
New York Commercial Co.	2,100	700	24,100	4,400	31,300
Edmund Reeks & Co.	6,400	1,800	10,600	800	19,600
Neale & Co.	13,400	3,100	3,200		19,700

Total 200,800 49,200 182,300 163,200 = 595,500

JUNE 14.—By the steamer Maranhense, from Manáos and Pará:	Fine.	Medium.	Coarse.	Caucho.	Total.
General Rubber Co.	151,700	33,800	91,000	67,100	343,600
Poel & Arnold	46,600	12,000	50,500	36,500	145,600
New York Commercial Co.	45,500	10,000	21,700	47,900	125,100
A. T. Morse & Co.	43,900	5,800	11,600	3,700	65,000
C. P. dos Santos	23,700	3,300	21,500		48,500
Neale & Co.	15,400	3,500	28,600	2,100	49,600
Hagemeyer & Brunn.	28,200		15,100		43,300
Edmund Reeks & Co.	16,100	5,400	24,500		46,000
G. Amsinck & Co.		1,300	3,500		4,800
L. Johnson & Co.				43,000	43,000

Total 371,100 75,100 268,000 300,300 = 914,500

JUNE 24.—By the steamer Madeirense, from Manáos and Pará:	Fine.	Medium.	Coarse.	Caucho.	Total.
General Rubber Co.	35,900	12,700	48,600	34,500	131,700
A. T. Morse & Co.	19,400	4,500	64,000	3,700	91,700
New York Commercial Co.	20,000	6,500	27,900	3,300	57,700
Poel & Arnold	200	6,100	9,600	15,200	31,100
C. P. dos Santos	11,100	6,800	32,000	1,300	51,200
Hagemeyer & Brunn.	11,000		11,900		22,900
Edmund Reeks & Co.			11,900		11,900
Neale & Co.		300	1,300	700	2,300

Total 97,600 37,000 207,200 58,700 = 400,500

[Note.—The steamer Basil, from Pará, is due at New York July 5 with 240 tons Pará and 30 tons Caucho.]

#### PARA RUBBER VIA EUROPE.

	Pounds.
MAY 23.—By the <i>Bataria</i> =Hamburg:	
Poel & Arnold (Coarse)	15,000
MAY 28.—By the <i>Victorian</i> =Liverpool:	
Poel & Arnold (Fine)	50,000
MAY 29.—By the <i>Carmanis</i> =Liverpool:	
New York Commercial Co. (Fine)	22,500
MAY 31.—By the <i>Panama</i> =Mollendo:	
New York Commercial Co. (Fine)	6,000
W. R. Grace & Co. (Caucho)	4,500
MAY 31.—By the <i>Pretoria</i> =Hamburg:	
General Rubber Co. (Coarse)	65,000
JUNE 8.—By the <i>Campania</i> =Liverpool:	
New York Commercial Co. (Fine)	7,000
JUNE 10.—By the <i>Baltic</i> =Liverpool:	
Poel & Arnold (Caucho)	33,000
JUNE 12.—By the <i>Carmanis</i> =Liverpool:	
Poel & Arnold (Caucho)	11,500
JUNE 14.—By the <i>Grenada</i> =Ciudad Bolívar:	
Thebaud Brothers (Fine)	22,500
Thebaud Brothers (Coarse)	13,500
G. Amsinck & Co. (Fine)	2,500
JUNE 18.—By the <i>Venetia</i> =Mollendo:	
W. R. Grace & Co. (Caucho)	9,500
JUNE 20.—By the <i>Armenian</i> =Liverpool:	
New York Commercial Co. (Fine)	33,500
Poel & Arnold (Coarse)	9,000
JUNE 21.—By the <i>Walderssee</i> =Hamburg:	
General Rubber Co. (Coarse)	7,500

#### OTHER ARRIVALS AT NEW YORK.

	Pounds.
MAY 25.—By the <i>Esperanza</i> =Frontera:	
E. Steiger & Co.	7,000

#### CENTRALS—Continued.

	Pounds.
Harburger & Stack	6,000
Strube & Ulitz	3,500
Graham, Hinkley & Co.	2,000
Thebaud Brothers	1,500
Frederick Probat & Co.	1,000
MAY 25.—By the <i>Advance</i> =Colon:	
New York Commercial Co.	8,000
Pablo Calvet Co.	2,000
A. Rosenthal Sons	1,500
Eggers & Heinlein	1,500
G. Amsinck & Co.	1,500
MAY 27.—By the <i>Vigilancia</i> =Tampico:	
Ramsh & Helde	35,000
Edward Maurer	30,000
Isaac Kubie & Co.	5,000
Harburger & Stack	1,000
MAY 29.—By the <i>Carmanis</i> =Liverpool:	
George A. Alden & Co.	4,500
A. T. Morse & Co.	2,500
A. Hirsch & Co.	1,000
MAY 29.—By the <i>El Siglo</i> =Galveston:	
Continental-Mexican Rubber Co.	22,500
MAY 29.—By the <i>Stigmund</i> =Colon:	
W. R. Grace & Co.	4,500
Hirzel, Feltman & Co.	1,500
Ados, Santos & Co.	1,500
A. M. Capen's Sons	1,500
MAY 31.—By the <i>Panama</i> =Colon:	
G. Amsinck & Co.	15,500
Roldau & Van Sickle	4,000
Hirzel, Feltman & Co.	3,000
Dumarest Bros. Co.	1,500
Pablo, Calvet Co.	1,500
Ados, Santos & Co.	1,500
New York Commercial Co.	1,500
L. Johnson & Co.	1,500
JUNE 1.—By the <i>Mexico</i> =Frontera:	
Harburger & Stack	3,500

#### CENTRALS—Continued.

	Pounds.
W. L. Wadleigh	2,000
E. Steiger & Co.	1,000
H. Marquardt & Co.	1,500
JUNE 1.—By the <i>El Norte</i> =New Orleans:	
A. T. Morse & Co.	7,000
A. N. Rotholz	4,000
Eggers & Heinlein	1,500
Manhattan Rubber Manufacturing Co.	1,500
JUNE 3.—By the <i>El Rio</i> =Galveston:	
Continental-Mexican Rubber Co.	22,500
JUNE 4.—By the <i>Alianza</i> =Colon:	
Piza Nephews Co.	2,500
Kunhardt & Co.	1,500
G. Amsinck & Co.	1,500
E. B. Strout	1,500
Silva, Bussens Co.	1,500
Meyer Hecht	1,000
Aramburo Incorporated	1,000
Andreas & Co.	1,000
JUNE 6.—By the <i>Orinoco</i> =Caribbean:	
Ados, Santos & Co.	3,000
W. R. Grace & Co.	2,000
G. Amsinck & Co.	2,000
Escobar & Gorgorza	1,500
Hirzel, Feltman & Co.	1,500
JUNE 6.—By the <i>Joachim</i> =Colombia:	
Cortez Commercial Co.	5,500
Escobar & Gorgorza	3,000
Isaac Brandon & Bros.	3,000
Martinez & Blanco	2,500
A. Held	1,500
D. A. De Lima Co.	1,000
United Trust Co.	1,000
JUNE 6.—By the <i>Camaguey</i> =Tampico:	
New York Commercial Co.	77,000
Edward Maurer	35,000
Harburger & Stack	3,000

## CENTRALS—Continued.

JUNE 6.—By the <i>Carib II</i> —Cebu:	
Eggers & Heinlein.....	3,000
H. W. Peabody & Co.....	1,000
JUNE 7.—By the <i>El Mar</i> —Galveston:	
Continental-Mexican Rubber Co.....	45,000
JUNE 8.—By the <i>Patricia</i> —Hamburg:	
Poel & Arnold.....	11,000
JUNE 8.—By the <i>Monterey</i> —Vera Cruz:	
New York Commercial Co.....	2,500
Harburger & Stack.....	2,500
H. Marquardt & Co.....	2,500
Lewis & Palf.....	1,500
Frederick Probst & Co.....	1,000
JUNE 10.—By the <i>Gunther</i> —Bahia:	
Poel & Arnold.....	35,000
American Commercial Co.....	13,500
New York Commercial Co.....	11,500
J. H. Rosback Bros.....	4,500
A. Hirsch & Co.....	1,500
A. D. Hitch & Co.....	1,000
JUNE 10.—By <i>El Siglo</i> —Galveston:	
Continental-Mexican Rubber Co.....	65,000
JUNE 13.—By the <i>Provence</i> —Havre:	
Robinson & Stiles.....	7,000
JUNE 12.—By the <i>Finance</i> —Colon:	
Andreas & Co.....	2,500
Pablo, Calvet Co.....	2,500
Hirzel, Feltman & Co.....	2,500
Mann & Emdon.....	2,000
National Sewing Machine Co.....	1,500
Andean Trading Co.....	1,000
JUNE 13.—By the <i>Comus</i> —New Orleans:	
Manhattan Rubber Manufacturing Co.....	4,500
Eggers & Heinlein.....	2,500
A. T. Morse & Co.....	1,500
G. Amsinck & Co.....	1,000
JUNE 14.—By the <i>Adriatic</i> —London:	
A. Hirsch & Co.....	11,500
JUNE 14.—By <i>El Dorado</i> —Galveston:	
Continental-Mexican Rubber Co.....	33,000
JUNE 15.—By the <i>Merida</i> —Frontera:	
Harburger & Stack.....	7,000
E. Steiger & Co.....	5,000
American Trading Co.....	2,500
New York Commercial Co.....	1,500
Isaac Kubie & Co.....	1,000
JUNE 17.—By the <i>Yumuri</i> —Tampico:	
Edward Maurer.....	65,000
New York Commercial Co.....	27,000
JUNE 17.—By the <i>Colon</i> —Colon:	
Dumarest Bros. Co.....	5,500
Roldan & Van Sickle.....	3,500
G. Amsinck & Co.....	2,500
Pablo, Calvet Co.....	2,500
L. Johnson & Co.....	1,500
Aramburo Incorporated.....	1,500
R. Fabien & Co.....	1,000
JUNE 18.—By <i>El Monte</i> —New Orleans:	
A. N. Rotholz.....	4,000
A. T. Morse & Co.....	1,500
JUNE 18.—By the <i>Thespi</i> —Bahia:	
Poel & Arnold.....	28,000
American Commercial Co.....	8,000
JUNE 18.—By <i>El Sud</i> —Galveston:	
Continental-Mexican Rubber Co.....	22,500
JUNE 18.—By the <i>Venetia</i> —Colon:	
D. A. De Lima & Co.....	3,000
A. Held.....	1,500
Isaac Brandon & Bros.....	1,500
Suzarte & Whitney.....	2,000
G. Amsinck & Co.....	1,500
H. Marquardt & Co.....	1,000
JUNE 19.—By <i>El Alba</i> —Galveston:	
Continental-Mexican Rubber Co.....	22,500
JUNE 20.—By the <i>Magdalena</i> —Columbia:	
W. R. Grace & Co.....	2,000
Roldan & Van Sickle.....	1,500
G. Amsinck & Co.....	1,500
A. M. Capen's Sons.....	1,000
Seauz & Co.....	1,000
JUNE 20.—By the <i>Armenian</i> —Liverpool:	
George A. Alden & Co.....	5,500
JUNE 21.—By the <i>Advance</i> —Colon:	
Hirzel, Feltman & Co.....	4,500
Dumarest Bros. Co.....	2,500
Roldan & Van Sickle.....	2,000
G. Amsinck & Co.....	1,500
A. Santos & Co.....	1,000

\*This sign in connection with imports of Centrals denotes Guayule rubber.

## AFRICANS.

MAY 24.—By the <i>Hudson</i> —Havre:	
Poel & Arnold.....	45,000
George A. Alden & Co.....	15,000

## AFRICANS—Continued.

MAY 27.—By the <i>Celtic</i> —London:	
General Rubber Co.....	20,000
George A. Alden & Co.....	28,000
MAY 28.—By the <i>Victorian</i> —Liverpool:	
Livesey & Co.....	15,000
MAY 29.—By the <i>Caronia</i> —Liverpool:	
A. T. Morse & Co.....	30,000
George A. Alden & Co.....	5,500
Livesey & Co.....	5,500
W. L. Gough Co.....	9,000
MAY 31.—By the <i>Pretoria</i> —Hamburg:	
A. T. Morse & Co.....	38,000
Poel & Arnold.....	25,000
JUNE 3.—By the <i>Vaderland</i> —Antwerp:	
George A. Alden & Co.....	5,500
A. T. Morse & Co.....	4,500
Raw Products Co.....	4,500
General Rubber Co.....	5,500
JUNE 3.—By the <i>Blucher</i> —Hamburg:	
A. T. Morse & Co.....	65,000
Poel & Arnold.....	7,000
George A. Alden & Co.....	3,500
JUNE 6.—By the <i>Majestic</i> —Liverpool:	
General Rubber Co.....	15,000
Henry A. Gould Co.....	5,500
JUNE 8.—By the <i>Campania</i> —Liverpool:	
Livesey & Co.....	22,500
JUNE 8.—By the <i>Patricia</i> —Hamburg:	
Poel & Arnold.....	15,500
Rubber Trading Co.....	10,000
A. T. Morse & Co.....	7,000
George A. Alden & Co.....	5,500
JUNE 8.—By the <i>St. Louis</i> —London:	
General Rubber Co.....	50,000
JUNE 10.—By the <i>Baltic</i> —Liverpool:	
General Rubber Co.....	220,000
A. T. Morse & Co.....	11,000
JUNE 12.—By the <i>Finland</i> —Antwerp:	
Joseph Cantor.....	22,500
W. L. Gough & Co.....	13,000
A. T. Morse & Co.....	6,500
JUNE 12.—By the <i>Carmania</i> —Liverpool:	
General Rubber Co.....	60,000
A. T. Morse & Co.....	17,000
Poel & Arnold.....	34,000
W. L. Gough Co.....	5,500
JUNE 13.—By the <i>Pres. Lincoln</i> —Hamburg:	
A. T. Morse & Co.....	40,000
Poel & Arnold.....	20,000
JUNE 15.—By the <i>Cedric</i> —Liverpool:	
A. T. Morse & Co.....	11,500
George A. Alden & Co.....	6,500
A. W. Brunn Co.....	5,500
JUNE 17.—By the <i>Lorraine</i> —Havre:	
George A. Alden & Co.....	6,000
JUNE 17.—By the <i>Philadelphia</i> —London:	
General Rubber Co.....	30,000
JUNE 17.—By the <i>Amerika</i> —Hamburg:	
A. T. Morse & Co.....	33,000
JUNE 17.—By the <i>Cambroman</i> —Antwerp:	
Poel & Arnold.....	56,000
Joseph Cantor.....	6,500
JUNE 20.—By the <i>Armenian</i> —Liverpool:	
Raw Products Co.....	11,500
George A. Alden & Co.....	3,500
JUNE 21.—By the <i>Waldersee</i> —Hamburg:	
A. T. Morse & Co.....	45,000
Poel & Arnold.....	13,500
W. L. Gough Co.....	5,500
Rubber Trading Co.....	3,500
George A. Alden & Co.....	3,500

## EAST INDIAN.

MAY 25.—By the <i>Schuykill</i> —Singapore:	
Heabler & Co.....	30,000
Poel & Arnold.....	15,000
MAY 27.—By the <i>Lowther Castle</i> —Singapore:	
Heabler & Co.....	45,000
A. T. Morse & Co.....	13,500
Joseph Cantor.....	35,000
MAY 28.—By the <i>Minnetonka</i> —London:	
General Rubber Co.....	6,500
George A. Alden & Co.....	3,000
MAY 31.—By the <i>Gordon Castle</i> —Colombo:	
A. T. Morse & Co.....	15,000
JUNE 3.—By the <i>Vaderland</i> —Antwerp:	
George A. Alden & Co.....	4,500
JUNE 7.—By the <i>Barborossa</i> —Genoa:	
A. W. Brunn Co.....	8,000
JUNE 8.—By the <i>Patricia</i> —Hamburg:	
Rubber Trading Co.....	11,500
W. L. Gough Co.....	3,500

## EAST INDIAN—Continued.

JUNE 11.—By the <i>Minnehaha</i> —London:	
General Rubber Co.....	15,000
George A. Alden & Co.....	15,000
JUNE 14.—By the <i>Adriatic</i> —London:	
Poel & Arnold.....	3,500
A. T. Morse & Co.....	2,500
JUNE 19.—By the <i>Mesaka</i> —London:	
George A. Alden & Co.....	4,500
JUNE 19.—By the <i>Albenga</i> —Singapore:	
Winter & Smillie.....	9,000
JUNE 20.—By the <i>Teutonic</i> —London:	
Poel & Arnold.....	5,500
*Denotes Plantation rubber.	
GUTTA-JELUTONG.	
POUNDS.	
MAY 25.—By the <i>Schuykill</i> —Singapore:	
Heabler & Co.....	300,000
George A. Alden & Co.....	315,000
Winter & Smillie.....	110,000
MAY 27.—By the <i>Lowther Castle</i> —Singapore:	
H. Pauli & Co.....	175,000
L. Littlejohn & Co.....	110,000
W. L. Gough Co.....	425,000
Heabler & Co.....	300,000
George A. Alden & Co.....	2,000
MAY 28.—By the <i>Statendam</i> —Rotterdam:	
Heabler & Co.....	45,000
JUNE 3.—By the <i>Bovic</i> —Liverpool:	
George A. Alden & Co.....	35,000
JUNE 11.—By the <i>Ryndam</i> —Rotterdam:	
Heabler & Co.....	80,000
JUNE 19.—By the <i>Albenga</i> —Singapore:	
George A. Alden & Co.....	150,000
Heabler & Co.....	430,000
L. Littlejohn & Co.....	55,000
N. Jaachensen.....	110,000
J. W. Phyfer & Co.....	85,000
GUTTA PERCHA.	
POUNDS.	
MAY 25.—By the <i>Schuykill</i> —Singapore:	
Poel & Arnold.....	5,500
MAY 27.—By the <i>Lowther Castle</i> —Singapore:	
H. Pauli & Co.....	22,000
JUNE 13.—By the <i>President Lincoln</i> —Hamburg:	
Robert Soltan Co.....	7,500
BALATA.	
POUNDS.	
JUNE 3.—By the <i>Korona</i> —Demerara:	
A. T. Morse & Co.....	6,500
George A. Alden & Co.....	2,500
Frame & Co.....	1,500
G. Amsinck & Co.....	1,500
JUNE 12.—By the <i>Carmania</i> —Liverpool:	
W. L. Gough Co.....	4,500
JUNE 17.—By the <i>Caracas</i> —La Guayra:	
G. Amsinck & Co.....	2,500

## CUSTOM HOUSE STATISTICS.

## PORT OF NEW YORK—MAY.

Imports:	POUNDS.	VALUE.
India-rubber.....	5,993,797	\$4,537,695
Balata.....	123,784	46,862
Gutta-percha.....	64,198	13,831
Gutta-jelutong (Pontianak).....	4,126,106	167,132
Total.....	10,307,885	\$4,765,520
Exports:		
India-rubber.....	85,989	\$53,342
Rubber Scrap imported.....	1,140,992	\$112,862

## BOSTON ARRIVALS.

	POUNDS.
APR. 2.—By the <i>Sagamore</i> —Liverpool:	
Poel & Arnold—Africans.....	13,473
APR. 2.—By the <i>Sagamore</i> —Liverpool:	
George A. Alden & Co.—Africans.....	2,284
APR. 8.—By the <i>Sylvania</i> —Liverpool:	
George A. Alden & Co.—Africans.....	31,668
APR. 16.—By the <i>Michigan</i> —Liverpool:	
George A. Alden & Co.—Africans.....	17,955
APR. 23.—By the <i>Sachem</i> —Liverpool:	
George A. Alden & Co.—Africans.....	38,935
APR. 24.—By the <i>Barcelona</i> —Hamburg:	
George A. Alden & Co.—Africans.....	2,154
Total.....	106,469
Value, \$69,744.	





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## OFFICIAL STATISTICS OF RUBBER (IN POUNDS).

## UNITED STATES.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1907.....	6,964,693	399,422	6,565,271
January-March.....	23,810,218	1,079,002	22,731,216
Four months, 1907	30,774,911	1,478,424	29,296,487
Four months, 1906	24,928,062	1,229,754	23,698,308
Four months, 1905	32,606,023	1,134,713	31,471,310

## GERMANY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1907.....	4,029,080	858,880	3,170,200
January-March.....	8,646,220	3,635,060	5,011,160
Four months, 1907	12,675,300	4,493,940	8,181,360
Four months, 1906	14,560,260	3,954,060	10,606,200
Four months, 1905	14,879,480	4,874,540	10,004,940

## FRANCE.\*

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1907.....	3,420,120	2,292,180	1,127,940
January-March.....	7,969,500	5,133,260	2,836,240
Four months, 1907	11,389,620	7,425,440	3,964,180
Four months, 1906	12,166,440	5,237,540	6,928,900
Four months, 1905	10,216,580	5,599,000	4,617,580

## BELGIUM.†

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1907.....	1,387,078	791,793	595,285
January-March.....	4,809,514	3,088,599	1,720,915
Four months, 1907	6,196,592	3,880,392	2,316,200
Four months, 1906	7,097,065	4,173,956	2,923,109
Four months, 1905	6,272,223	4,070,729	2,195,494

## GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1907.....	8,724,576	3,730,720	4,993,856
January-March.....	20,225,296	8,994,496	11,230,800
Four months, 1907	28,949,872	12,725,216	16,224,656
Four months, 1906	23,847,264	12,645,584	11,201,680
Four months, 1905	21,776,608	12,835,996	8,941,512

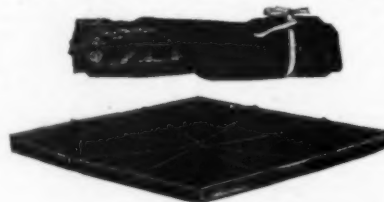
NOTE.—German statistics before Jan. 1, 1906, include Gutta-percha, Balata, old (waste) rubber. British figures include old rubber. French, Austrian and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

\*General Commerce.

†Special Commerce.

## ALLEN'S SAFETY FLOOR MAT.

THE Safety Floor Mat, marketed originally as an accessory to the Allen portable bathing outfit, has found a field of its own and is carried in stock by many firms as a separate article of trade. This mat is used for the protection of floors,



SAFETY FLOOR MAT.

[The lower view shows the mat spread out for use, and the upper view the mat rolled up for convenient carriage.]

carpets, and the like, from splashing, spray, and dripping water, when bathing children, invalids, pets, etc.; when watering plants, and for many other purposes. When it is desired to empty one of these mats after use it is done as shown in the small illustrations to the right. The Safety floor mats are made of special heavy black rubber coated best quality drill, constructed without seams, thereby preventing leakage and rendering its use sanitary. Mats are fitted with the Allen improved radial supports and lifting device, enabling user to easily lift and empty the mats when completely filled with water. The Allen portable bathing outfit is designed especially for convenience when traveling or in camp, for which it has much merit. [The Allen Manufacturing Co., Toledo, O.]



SAFETY FLOOR MAT.

[Mat filled and being carried with one hand. Mat being emptied with two hands.]

THE management of the Isthmus Plantation Association of Mexico arranged recently for a meeting of their shareholders residing in and near Chicago, at which a report on the company's rubber planting in Mexico was presented and discussion invited. This is to be followed by similar meetings of shareholders at seven other centers, all to be preliminary to a general meeting of shareholders' representatives, probably at Milwaukee, with a view to deciding the company's future policy.

**HIGH GRADE RECLAIMED RUBBER**

\*\*\*\*\*

Special stocks made to manufacturers' specifications

Cured and uncured stocks reclaimed for the trade

WASHING AND GRINDING

Inquiries solicited

\*\*\*\*\*

**RICKABY RUBBER MANUFACTURING CO.**

Office and Factory  
South Framingham, Massachusetts

**Le Caoutchouc & La Gutta-Percha**

49, Rue des Vinaigriers, PARIS (10e), FRANCE,

New York Office: No. 874 BROADWAY.

Representative---CH. DIEN

The only Journal in the French language dealing with India Rubber and Gutta-percha and the industries connected therewith, including Asbestos, Celluloid, and Insulating Materials. Published on the 15th of each month.

**ANNUAL SUBSCRIPTION: 25 FRANCS.**

An unexcelled advertising medium for firms wishing to introduce their products into France and the French colonies.

Specimen copies free. Tariff of advertisements on demand.

*Mention The India Rubber World when you write.*

**Special Notice TO THE Rubber Planting World****PARA, CASTILLOA, CEARA, ETC.**

Seeds and stumps forwarded to all parts of the World. Orders being booked from Planters, Merchants, Govt. Botanical and Agricultural Departments, Officials, Consuls, Missionaries, Lawyers, etc., from all parts of the Globe.

The Chief of a Botanical and Scientific Department who bought a large quantity of Para and Castilloa seed from last two crops, writes, 19th November, 1906: "We may however want a large quantity of seeds next year, both of Castilloa and Para. I shall be obliged if you will quote me your lowest possible price for both Para and Castilloa in quantities of 250,000, 500,000, 750,000 and 1,000,000."

The Director of a Govt. Experiment Station, Honolulu, writes, December 18th, 1906: "Yours of October 15th at hand; the 22 packages Castilloa Elastica seed came about three weeks ago, and are of good quality, nearly all having germinated."

Special offer of seeds and stumps, with circulars, on view at the office of this paper and post free on application.

Seeds of celebrated Caravonica and Spence Cotton. For green manuring, Crotonaria Striata, Vigna, Groundnuts, etc. Price on application.

See further particulars in our advertisement in this paper, page 41.

Telegraphic Address:

J. F. WILLIAM & BROS.,

William, Henaratgoda, Ceylon.

Tropical Seed Merchants,

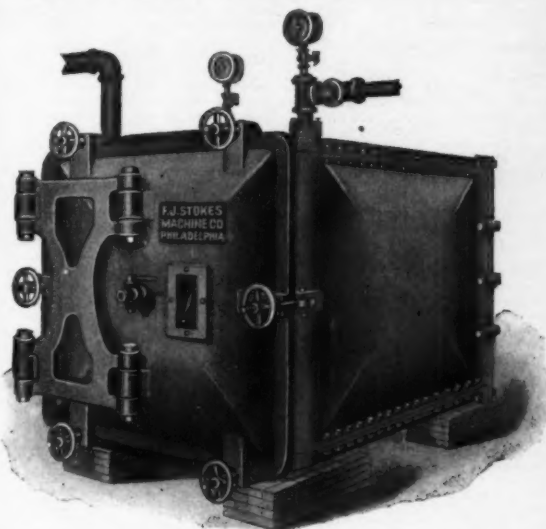
Liber's, A.I. and A.B.C. Codes used.

Henaratgoda, Ceylon.

Also private codes.

*Mention The India Rubber World when you write.*

Improve your process by using our Vacuum Driers, and dry in hours what may take you months.



WRITE US FOR CATALOGUE

**F. J. Stokes Machine Co.**  
PHILADELPHIA

**SYRINGE BOXES**

**OF WHITE WOOD, BASS, OAK, ASH, Etc.**

FINE WORK. LOW PRICES. PROMPT SHIPMENT.

*Estimates and Samples Furnished on Application.*

ALSO ANY OTHER KIND OF

**FANCY WOOD BOXES MADE TO ORDER**

*Extensive Facilities enable us to Guarantee Satisfaction.*

**HENRY H. SHEIP MFG. CO.**

6th St. and Columbia Ave., Philadelphia, Pa.

*Mention The India Rubber World when you write.*



**Bicycle, Carriage, Automobile.**

**NONE BETTER.**

**KOKOMO RUBBER CO.,**

**KOKOMO, IND.**

*Mention The India Rubber World when you write.*

**Classified List of Manufacturers and Dealers in India-Rubber Goods and Rubber Manufacturers' Supplies.**

Continental Rubber Works, Erie, Pa.  
Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co.  
Canadian Rubber Co. of Montreal.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co.  
of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
National India Rubber Co., Bristol, R. I.



## RUBBER BUYERS' DIRECTORY—Continued.

## Carriage Mats.—Continued.

N. J. Car Spring & Rubber Co., Jersey City, N. J.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Boston, Mass.  
Voorhees Rubber Mfg. Co., Jersey City.

## Cord (Pure Rubber).

Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co., Cleveland Rubber Works, Erie, Pa.  
Continental Rubber Works, Erie, Pa.  
Davol Rubber Co., Providence, R. I.  
Dayton Rubber Mfg. Co., Dayton, O.  
Electric Hose & Rubber Co., Wilmington, Del.  
Empire Rubber Mfg. Co., Trenton, N. J.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Hepburn Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-New York.  
Voorhees Rubber Mfg. Co., Jersey City.

## Deckle Straps.

Boston Belting Co., Boston.  
Canadian Rubber Co. of Montreal.  
B. F. Goodrich Co., Akron, O.  
Mechanical Rubber Co., Chicago.  
New York Belting & Packing Co., N. Y.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-New York.

## Door Springs.

Hodgman Rubber Co., New York.

## Dredging Sleeves.

Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co., Canadian Rubber Co. of Montreal.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
N. J. Car Spring & Rubber Co., Jersey City.  
New York Belting & Packing Co., N. Y.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston, Mass.

## Force Cups.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Hodgman Rubber Co., New York.  
National India Rubber Co., Bristol, R. I.

## Fruit Jar Rings.

Acme Rubber Mfg. Co., Trenton.  
Boston Woven Hose & Rubber Co., Canadian Rubber Co. of Montreal.  
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.  
Cleveland Rubber Co., Cleveland, O.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
B. F. Goodrich Co., Akron, O.  
Empire Rubber Mfg. Co., Trenton, N. J.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Manhattan Rubber Mfg. Co., New York.  
Revere Rubber Co., Youngstown, O.  
New York Belting & Packing Co., N. Y.

## Fuller Balls.

Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.  
Jenkins Bros., New York.  
National India Rubber Co., Bristol, R. I.  
N. J. Car Spring & Rubber Co., Jersey City.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Youngstown, O.

## Gage Glass Washers.

Boston Belting Co., Boston, Mass.  
Canadian Rubber Co. of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
Electric Hose & Rubber Co., Wilmington, Del.  
Empire Rubber Mfg. Co., Trenton, N. J.  
B. F. Goodrich Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
Jenkins Bros., New York.  
Manhattan Rubber Mfg. Co., New York.  
Mechanical Rubber Co., Chicago, Ill.  
National India Rubber Co., Bristol, R. I.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
New York Belting & Packing Co., N. Y.  
New York Rubber Co., New York.

## Gage Glass Washers.—Continued.

Revere Rubber Co., Boston, Mass.  
Jos. Stokes Rubber Co., Trenton, N. J.  
Voorhees Rubber Mfg. Co., Jersey City, N. J.

## Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Davison Rubber Co., Boston.  
Davol Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
National India Rubber Co., Bristol, R. I.  
Peerless Rubber Mfg. Co., New York.  
Tyr Rubber Co., Andover, Mass.  
Voorhees Rubber Mfg. Co., Jersey City.

## Gasket Tubing.

Canadian Rubber Co. of Montreal.  
Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Jenkins Bros., New York.  
National India Rubber Co., Bristol, R. I.  
New Jersey Car Spring & Rubber Co., Revere Rubber Co., Boston.

## Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.  
Dayton Rubber Mfg. Co., Dayton, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

## Hat Bags.

Boston Belting Co., Boston.  
Canadian Rubber Co. of Montreal.  
Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.  
Home Rubber Co., Trenton, N. J.  
Manhattan Rubber Mfg. Co., New York.  
Mattison Rubber Co., Chicago.  
Mechanical Rubber Co., Chicago.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
New York Belting & Packing Co., N. Y.  
New York Rubber Co., New York.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston.

## Horse Shoe Pads.

Canadian Rubber Co. of Montreal.  
Continental Rubber Works, Erie, Pa.  
Home Rubber Co., Trenton, N. J.  
Peerless Rubber Mfg. Co., New York.  
Plymouth Rubber Co., Stoughton, Mass.  
Revere Rubber Co., Boston-New York.  
Voorhees Rubber Mfg. Co., Jersey City.

## Hose—Wire Wound.

Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co., Canadian Rubber Co. of Montreal.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
Electric Hose & Rubber Co., Wilmington, Del.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
National India Rubber Co., Bristol, R. I.  
N. J. Car Spring & Rubber Co., Jersey City.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-New York.  
Voorhees Rubber Mfg. Co., Jersey City.

## Hose Core.

Alderfer Crute Co., Sharon Center, O.  
Hose Pipes, Nozzles, Couplings and Fittings.

Boston Woven Hose & Rubber Co., Canadian Rubber Co. of Montreal.  
Eureka Fire Hose Co., New York.  
Revere Rubber Co., Boston.  
A. Schrader's Son, Inc., New York.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

## Hose Linings.

Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co., Empire Rubber Mfg. Co., Trenton, N. J.  
Eureka Rubber Mfg. Co., Trenton, N. J.  
B. F. Goodrich Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Boston.

## Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
New York Belting & Packing Co., N. Y.  
Wirt & Knox Mfg. Co., Philadelphia.

## Hose—Rubber Lined.

Cotton and Linen.  
Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co., Gutta Percha & Rubber Mfg. Co., N. Y.  
Canadian Rubber Co. of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Empire Rubber Mfg. Co., Trenton, N. J.  
Eureka Fire Hose Co., New York.  
Fabric Fire Hose Co., New York.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
Manhattan Rubber Mfg. Co., New York.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston.  
Jos. Stokes Rubber Co., Trenton, N. J.  
Voorhees Rubber Mfg. Co., Jersey City.

## Hose—Submarine.

Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Continental Rubber Works, Erie, Pa.  
Electric Hose & Rubber Co., Wilmington, Del.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston.  
A. Schrader's Son, Inc., New York.

## Hose Bands, Straps &amp; Menders.

Boston Woven Hose & Rubber Co., William Yardon, Fort Plain, N. Y.

## Lawn-Hose Supporters.

C. J. Bailey & Co., Boston.

## Lawn Sprinklers.

W. D. Allen Mfg. Co., Chicago.  
Boston Woven Hose & Rubber Co., Canadian Rubber Co. of Montreal.

## Mallets (Rubber).

Boston Belting Co., Boston-New York.  
Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
National India Rubber Co., Bristol, R. I.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Boston-New York.

## Mould Work.

(See Mechanical Rubber Goods.)  
H. O. Canfield Co., Bridgeport, Ct.  
Davidson Rubber Co., Boston.  
Davol Rubber Co., Providence, R. I.  
Dayton Rubber Mfg. Co., Dayton, O.  
Faultless Rubber Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Hodgman Rubber Co., New York.  
La Crosse (Wis.) Rubber Mills Co., Massachusetts Chemical Co., Walpole, Mass.  
Mattison Rubber Co., New York.  
Milford Rubber Works, Milford, Ill.  
Mitzel Rubber Co., Akron, O.  
Plymouth Rubber Co., Stoughton, Mass.  
Tyr Rubber Co., Andover, Mass.  
Western Rubber Works, Goshen, Ind.

## Oil Well Supplies.

Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co., Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
Lake Shore Rubber Co., Erie, Pa.  
N. J. Car Spring & Rubber Co., Jersey City.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.

## Oil Well Supplies.—Continued.

Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-Pittsburgh.  
Voorhees Rubber Mfg. Co., Jersey City.

## Packing.

Alfred Calmon, Ltd., London.  
Dayton Rubber Mfg. Co., Dayton, O.  
Jenkins Bros., New York.  
New Jersey Car Spring & Rubber Co., Voorhees Rubber Mfg. Co., Jersey City.

## Paper Machine Rollers.

Boston Belting Co., Boston-New York.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-New York.  
Voorhees Rubber Mfg. Co., Jersey City.

## Plumbers' Supplies.

Canadian Rubber Co. of Montreal.  
H. O. Canfield Co., Bridgeport, Ct.  
Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Revere Rubber Co., Youngstown, O.  
Western Rubber Works, Goshen, Ind.

## Pump Valves.

(See Mechanical Rubber Goods.)  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Jenkins Bros., New York.  
New York Belting & Packing Co., N. Y.  
Revere Rubber Co., Boston, Mass.  
Western Rubber Works, Goshen, Ind.

## Rollers—Rubber Covered.

Boston Belting Co., Boston.  
Canadian Rubber Co. of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Continental Rubber Works, Erie, Pa.  
Empire Rubber Mfg. Co., Trenton, N. J.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
Manhattan Rubber Mfg. Co., New York.  
Mechanical Rubber Co., Chicago.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Plymouth Rubber Co., Stoughton, Mass.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-New York.

## Sewing Machine Rollers.

Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.

## Springs—Rubber.

Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Canadian Rubber Co. of Montreal.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
National India Rubber Co., Bristol, R. I.  
N. J. Car Spring & Rubber Co., Jersey City.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Plymouth Rubber Co., Stoughton, Mass.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-New York.  
Voorhees Rubber Mfg. Co., Jersey City.

## Stair Treads.

Acme Rubber Mfg. Co., Trenton.  
Boston Belting Co., Boston-New York.  
Boston Woven Hose & Rubber Co., Canadian Rubber Co. of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Continental Rubber Works, Erie, Pa.  
Empire Rubber Mfg. Co., Trenton, N. J.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
Manhattan Rubber Mfg. Co., New York.  
National India Rubber Co., Bristol, R. I.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
New York Belting & Packing Co., N. Y.  
New York Rubber Co., New York.  
Peerless Rubber Mfg. Co., New York.  
Revere Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston-New York.  
Voorhees Rubber Mfg. Co., Jersey City.

## RUBBER BUYERS' DIRECTORY—Continued.

**Thread.**

B. F. Goodrich Co., Akron, O.  
Mechanical Fabric Co., Providence, R. I.  
Revere Rubber Co., Boston.

**Tiling.**

Canadian Rubber Co., of Montreal, Ltd.  
Continental Rubber Works, Erie, Pa.  
B. F. Goodrich Co., Akron, O.  
Gutta Percha & Rubber Mfg. Co., N. Y.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
N. J. Car Spring & Rubber Co., Jersey City.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Republic Rubber Co., Youngstown, O.  
Voorhees Rubber Mfg. Co., Jersey City.

**Tubing.**

(See Mechanical Rubber Goods.)  
American Hard Rubber Co., New York.  
Continental Rubber Works, Erie, Pa.  
Davidson Rubber Co., Boston.  
Daval Rubber Co., Providence, R. I.  
Dayton Rubber Mfg. Co., Dayton, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Plymouth Rubber Co., Stoughton, Mass.  
New Jersey Car Spring & Rubber Co., New York.  
New York Belting & Packing Co., N. Y.  
Tyr Rubber Co., Andover, Mass.

**Valve Balls.**

Boston Belting Co., Boston.  
Cleveland Rubber Co., Cleveland, O.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
B. F. Goodrich Co., Akron, O.  
Jenkins Bros., New York.  
Manhattan Rubber Mfg. Co., New York.  
Mechanical Rubber Co., Chicago.  
National India Rubber Co., Bristol, R. I.  
New York Belting & Packing Co., N. Y.  
New York Rubber Co., New York.  
Peerless Rubber Mfg. Co., New York.  
Republic Rubber Co., Youngstown, O.  
Revere Rubber Co., Boston.

**Valve Discs.**

American Hard Rubber Co., New York.  
Boston Belting Co., Boston-New York.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
B. F. Goodrich Co., Akron, O.  
Jenkins Bros., New York.  
New York Belting & Packing Co., N. Y.  
Peerless Rubber Mfg. Co., New York.  
Republic Rubber Co., Youngstown, O.  
Western Rubber Works, Goshen, Ind.

**Valves.**

(See Mechanical Rubber Goods.)  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Jenkins Bros., New York-Chicago.  
Milford Rubber Works Co., Milford, Ill.  
New Jersey Car Spring & Rubber Co., New York.  
New York Belting & Packing Co., N. Y.

**Vulcanized Emery Wheels.**

Manhattan Rubber Mfg. Co., Passaic, N. J.  
New York Belting & Packing Co., Ltd., New York.

**Wringer Rolls.**

Canadian Rubber Co., of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Continental Rubber Works, Erie, Pa.  
Dayton Rubber Mfg. Co., Dayton, O.  
B. F. Goodrich Co., Akron, O.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Home Rubber Co., Trenton, N. J.  
New York Belting & Packing Co., N. Y.  
Republic Rubber Co., Youngstown, O.

**DRUGGISTS' AND STATIONERS' SUNDRIES.****Atomizers.****Bandages.****Bulbs.****Syringes.****Water Bottles.****Druggists' Sundries—General.**

Allen Mfg. Co., Toledo, Ohio.  
American Hard Rubber Co., New York.  
C. J. Bailey & Co., Boston.  
Boston Woven Hose & Rubber Co.  
Canadian Rubber Co., of Montreal.  
Canton Rubber Co., Canton, O.  
Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Daval Rubber Co., Providence, R. I.  
Faultless Rubber Co., Akron, O.  
B. F. Goodrich Co., Akron, O.  
Hodgman Rubber Co., New York.

Hygela Nursing Bottle Co., Buffalo, N. Y.  
Imperial Rubber Mfg. Co., Beach City, O.  
Luzerne Rubber Co., Trenton, N. J.  
Mitsel Rubber Co., Akron, O.

**Druggists' Sundries—General—Continued.**

National India Rubber Co., Bristol, R. I.  
North British Rubber Co., Ltd., Edinburgh.  
Pirelli & Co., Milan, Italy.  
Seamless Rubber Co., New Haven, Ct.  
Tyr Rubber Co., Andover, Mass.

**Balls, Dolls and Toys.**

New York Rubber Co., New York.

**Combs.**

American Hard Rubber Co., New York.

**Elastic Bands.**

Canadian Rubber Co., of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Daval Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.  
Hodgman Rubber Co., New York-Boston.  
Tyr Rubber Co., Andover, Mass.

**Erasive Rubbers.**

Davidson Rubber Co., Boston.  
B. F. Goodrich Co., Akron, O.  
Mattson Rubber Co., New York.

**Finger Cots.**

Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Faultless Rubber Mfg. Co., Akron, O.  
B. F. Goodrich Co., Akron, O.  
Imperial Rubber Mfg. Co., Beach City, O.  
The Rubber Products Co., Barborton, O.

**Gloves.**

Canadian Rubber Co., of Montreal.  
Daval Rubber Co., Providence, R. I.  
Faultless Rubber Co., Akron, O.  
B. F. Goodrich Co., Akron, O.  
Imperial Rubber Mfg. Co., Beach City, O.  
National India Rubber Co., Bristol, R. I.  
Rubber Products Co., Barborton, O.

**Hard Rubber Goods.**

American Hard Rubber Co., New York.  
Canadian Rubber Co., of Montreal.  
Davidson Rubber Co., Boston.  
H. O. Canfield Co., Bridgeport, Ct.  
Daval Rubber Co., Providence, R. I.  
Household Rubber Co., Youngstown, O.  
Stokes Rubber Co., Joseph, Trenton, N. J.  
Tyr Rubber Co., Andover, Mass.

**Hospital Sheetings.**

Cleveland Rubber Co., Cleveland, O.  
Daval Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.  
Hodgman Rubber Co., New York.  
National India Rubber Co., Bristol, R. I.  
Plymouth Rubber Co., Stoughton, Mass.  
Tyr Rubber Co., Andover, Mass.

**Ice Bags and Ice Caps.**

Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Faultless Rubber Co., Akron, O.  
B. F. Goodrich Co., Akron, O.  
Imperial Rubber Mfg. Co., Beach City, O.  
National India Rubber Co., Bristol, R. I.  
The Rubber Products Co., Barborton, O.  
Tyr Rubber Co., Andover, Mass.

**Life Preservers.**

Hodgman Rubber Co., New York.  
National India Rubber Co., Bristol, R. I.

**Nipples.**

Canadian Rubber Co., of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Daval Rubber Co., Providence, R. I.  
Faultless Rubber Co., Akron, O.  
B. F. Goodrich Co., Akron, O.  
Hygela Nursing Bottle Co., Buffalo, N. Y.

Imperial Rubber Mfg. Co., Beach City, O.  
The Rubber Products Co., Barborton, O.  
Tyr Rubber Co., Andover, Mass.

**Portable Bath Outfits.**

Allen Mfg. Co., Toledo, Ohio.

**Shower Bath Sprinklers.**

A. Schrader's Son, Inc., New York.

**Sponges (Rubber).**

Geo. Borgfeldt & Co., New York.  
Faultless Rubber Co., Ashland, O.  
N. Tire Rubber Sponge Co., Chicago.

**Stationers' Sundries.**

American Hard Rubber Co., New York.  
Boston Woven Hose & Rubber Co.  
Canadian Rubber Co., of Montreal.  
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.  
Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Daval Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.

Hodgman Rubber Co., New York-Boston.  
Seamless Rubber Co., New Haven, Ct.  
Tyr Rubber Co., Andover, Mass.

**Stoppies (Rubber).**

Cleveland Rubber Co., Cleveland, O.  
Daval Rubber Co., Providence, R. I.  
Hodgman Rubber Co., New York.  
Manhattan Rubber Mfg. Co., New York.  
National India Rubber Co., Bristol, R. I.  
New York Belting & Packing Co., N. Y.  
A. Schrader's Sons, Inc., New York.  
Tyr Rubber Co., Andover, Mass.

**Throat Bags.**

Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Daval Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.  
National India Rubber Co., Bristol, R. I.  
Tyr Rubber Co., Andover, Mass.

**Tobacco Pouches.**

Canadian Rubber Co., of Montreal.  
Davidson Rubber Co., Boston.  
Faultless Rubber Co., Akron, O.  
B. F. Goodrich Co., Akron, O.  
The Rubber Products Co., Barborton, O.  
Tyr Rubber Co., Andover, Mass.

**MACKINTOSHED AND SURFACE GOODS.****Air Goods (Rubber).**

Canadian Rubber Co., of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Daval Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.  
Hodgman Rubber Co., New York.  
Metropolitan Air Goods Co., Reading, Mass.  
New York Rubber Co., New York.  
National India Rubber Co., Providence.  
Tyr Rubber Co., Andover, Mass.

**Air Mattresses.**

Canadian Rubber Co., of Montreal.  
Metropolitan Air Goods Co., Reading, Mass.  
Mechanical Fabric Co., Providence, R. I.  
National India Rubber Co., Bristol, R. I.

**Barbers' Bibs.**

Cleveland Rubber Co., Cleveland, O.  
Daval Rubber Co., Providence, R. I.  
Tyr Rubber Co., Andover, Mass.

**Bathing Caps.**

Daval Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.

**Bellows Cloths.**

Boston Rubber Co., Boston.  
Cleveland Rubber Co., Cleveland, O.  
Hodgman Rubber Co., New York.  
La Crosse (Wis.) Rubber Mills Co.

**Calendering.**

La Crosse (Wis.) Rubber Mills Co.  
Plymouth Rubber Co., Stoughton, Mass.

**Carriage Ducks and Drills.**

Cleveland Rubber Co., Cleveland, O.  
Empire Rubber Mfg. Co., Trenton, N. J.  
Gutta Percha & Rubber Mfg. Co., Toronto.  
National India Rubber Co., Bristol, R. I.

**Clothing.**

Canadian Rubber Co., of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
Granby Rubber Co., Granby, Quebec.  
Gutta Percha & Rubber Mfg. Co., of Toronto.  
Hodgman Rubber Co., New York.  
La Crosse (Wis.) Rubber Mills Co.  
National India Rubber Co., Bristol, R. I.  
North British Rubber Co., Ltd., Edinburgh.  
Pirelli & Co., Milan, Italy.

**Cravenette.**

Cravenette Co., Ltd.

**Diving Apparatus.**

A. Schrader's Son, Inc., New York.

**Diving Dresses.**

Hodgman Rubber Co., New York.

**Dress Shields.**

Mattson Rubber Co., New York.

**Horse Covers.**

Hodgman Rubber Co., New York.  
National India Rubber Co., Bristol, R. I.

**Leggings.**

Cleveland Rubber Co., Cleveland, O.  
Hodgman Rubber Co., New York.  
National India Rubber Co., Bristol, R. I.

**Mackintoshes.**

(See Clothing.)

**Proofing.**

Canadian Rubber Co., of Montreal.  
La Crosse (Wis.) Rubber Mills Co.  
Plymouth Rubber Co., Stoughton, Mass.

**Rain Coats.**

Cravenette Co., Ltd.

**Rubber Coated Cloths.**

Mechanical Fabric Co., Providence, R. I.

**RUBBER FOOTWEAR.****Boots and Shoes.**

American Rubber Co., Boston.  
Boston Rubber Shoe Co., Boston.  
Canadian Rubber Co., of Montreal.  
L. Candee & Co., New Haven, Ct.  
B. F. Goodrich Co., Akron, O.  
Granby Rubber Co., Granby, Quebec.  
Gutta Percha & Rubber Mfg. Co., of Toronto.  
Hood Rubber Co., Boston.  
Lycoming Rubber Co., Williamsport, Pa.  
Merger Rubber Co., New York.  
Milford Rubber Works Co., Milford, Ill.  
National India Rubber Co., Boston.  
North British Rubber Co., Ltd., Edinburgh.  
United States Rubber Co., New York.  
Wales-Goodyear Rubber Co., Boston.  
Woonsocket Rubber Co., Providence.

**Heels and Soles.**

Boston Woven Hose & Rubber Co.  
Canadian Rubber Co., of Montreal.  
Continental Canteen & Guttapercha Co., Hanover.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Plymouth Rubber Co., Stoughton, Mass.  
Western Rubber Works, Goshen, Ind.

**Tennis Shoes.**

American Rubber Co., Boston.  
Boston Rubber Shoe Co., Boston.  
Granby Rubber Co., Granby, Quebec.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
La Crosse Rubber Mills Co., La Crosse, Wis.  
National India Rubber Co., Providence.  
United States Rubber Co., New York.

**Wading Pants.**

Canadian Rubber Co., of Montreal.  
Hodgman Rubber Co., New York.

**DENTAL AND STAMP RUBBER.****Dental Gum.**

American Hard Rubber Co., New York.  
Cleveland Rubber Co., Cleveland, O.  
Tyr Rubber Co., Andover, Mass.

**Rubber Dam.**

Cleveland Rubber Co., Cleveland, O.  
Davidson Rubber Co., Boston.  
Daval Rubber Co., Providence, R. I.  
B. F. Goodrich Co., Akron, O.  
Hodgman Rubber Co., New York.  
Tyr Rubber Co., Andover, Mass.

**Stamp Gum.**

B. F. Goodrich Co., Akron, O.  
Mattson Rubber Co., New York.  
Mechanical Rubber Co., Chicago, Ill.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
New York Belting & Packing Co., N. Y.

**ELECTRICAL.****Electrical Supplies.**

American Hard Rubber Co., New York.  
Lake Shore Rubber Co., Erie, Pa.  
Joseph Stokes Rubber Co., Trenton, N. J.  
Massachusetts Chemical Co., Boston.  
Tyr Rubber Co., Andover, Mass.

**Friction Tape.**

Boston Belting Co., Boston.  
Boston Woven Hose & Rubber Co.  
Canadian Rubber Co., of Montreal.  
Cleveland Rubber Co., Cleveland, O.  
B. F. Goodrich Co., Akron, O.  
Home Rubber Co., Trenton, N. J.  
Massachusetts Chemical Co., Boston.  
Mechanical Rubber Co., Chicago.  
National India Rubber Co., Bristol, R. I.  
Revere Rubber Co., Boston-New York.



## RUBBER BUYERS' DIRECTORY—Continued.

<b>Hard Rubber Goods.</b> American Hard Rubber Co., New York. Canadian Rubber Co. of Montreal. Joseph Stokes Rubber Co., Trenton, N. J. <b>Insulating Compounds.</b> Canadian Rubber Co. of Montreal. Gutta-Percha & Rubber Mfg. Co., Toronto. Massachusetts Chemical Co., Boston. <b>Insulated Wire and Cables.</b> National India Rubber Co., Providence. <b>Splicing Compounds.</b> Home Rubber Co., Trenton, N. J. Massachusetts Chemical Co., Walpole, Mass.	<b>Golf Balls.</b> Boston Belting Co., Boston. Canadian Rubber Co. of Montreal. Davidson Rubber Co., Boston. B. F. Goodrich Co., Akron, O. The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd. <b>Sporting Goods.</b> Canadian Rubber Co. of Montreal. Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Hodgman Rubber Co., Andover, Mass. Tyler Rubber Co., Andover, Mass. <b>Striking Bags.</b> Canadian Rubber Co. of Montreal. Cleveland Rubber Co., Cleveland, O. Faultless Rubber Co., Akron, O. B. F. Goodrich Co., Akron, O. Rubber Products Co., Barberton, O. <b>Submarine Outfits.</b> Hodgman Rubber Co., New York.	<b>MISCELLANEOUS.</b> <b>Boiler Specialist.</b> H. W. Jones, New York. <b>Boxes (Wood).</b> Henry H. Sheip & Co., Philadelphia. <b>Brass Fittings.</b> A. Schrader's Son, Inc., New York. <b>Buckles.</b> The Weld Mfg. Co., Boston. <b>Cement (Rubber).</b> Boston Belting Co., Boston. Canadian Rubber Co. of Montreal. B. F. Goodrich Co., Akron, O. Hadley Cement Co., Lynn, Mass. Manhattan Rubber Mfg. Co., New York. N. J. Car Spring & Rubber Co., Jersey City, N. J. New York Belting & Packing Co., N. Y. <b>Chemical Analyses.</b> Durand Woodman, Ph.D., New York.	<b>Chemical and Mechanical Engineer.</b> Charles E. Farrington, Boston. <b>Chemists.</b> Stephen P. Sharples, Boston, Mass. Durand Woodman, Ph.D., New York. <b>Consulting Engineer.</b> M. P. Fillingham, New York. <b>Engraver.</b> P. C. Smith, Boston, Mass. <b>Recording Thermometers.</b> Bristol Co., New York. <b>Rubber Journals.</b> Gummi-Zeitang, Dresden, Germany. <b>Rubber Tree Seeds.</b> J. P. William & Bros., Heneratoda, Ceylon. <b>Scrap Metals.</b> Robert L. Crooke, New York. <b>Valves for Air Goods.</b> A. Schrader's Son, Inc., New York.
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## MACHINERY AND SUPPLIES FOR RUBBER MILLS.

## RUBBER MACHINERY.

**Acid Tanks.**  
 Birmingham Iron Foundry, Derby, Conn.

**Band Cutting Machines.**  
 A. Adamson, Akron, O.  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.

**Belt Folding Machines.**  
 Birmingham Iron Foundry, Derby, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Belt Slitters.**  
**Cloth Dryers.**  
**Gearing.**  
**Shafting.**

**Wrapping Machines.**  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Belt Stretchers.**  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.  
 Hoggson & Pettis Mfg. Co., New Haven.

**Boilers.**  
 William R. Thropp, Trenton, N. J.  
 John E. Thropp & Sons Co., Trenton, N. J.

**Braiders.**  
 New England Butt Co., Providence, R. I.  
 Textile Machine Works, Reading, Pa.

**Cabling Machinery.**  
 Alton Machine Co., New York.

**Calenders.**  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 David Bridge & Co., Castleton, Manchester, Eng.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.  
 Textile-Finishing Machinery Co., Providence, R. I.  
 Textile Machine Works, Reading, Pa.

**Castings.**  
 A. Adamson, Akron, O.  
 Birmingham Iron Foundry, Derby, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Chucks (Laths).**  
 Hoggson & Pettis Mfg. Co., New Haven.

**Churns.**  
 American Tool & Machine Co., Boston.

**Clutches.**  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Crackers.**  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.

**Devulcanizers.**  
 Alton Machine Co., New York.  
 Biggs Boiler Works Co., Akron, O.  
 Birmingham Iron Foundry, Derby, Conn.  
 Edred W. Clark, Hartford, Conn.  
 William R. Thropp, Trenton, N. J.

**Dies.**  
 John J. Adams, Worcester, Mass.  
 Boston Die Co., Boston.  
 Hoggson & Pettis Mfg. Co., New Haven.  
 Joseph E. Knox & Co., Lynn, Mass.

**Doubling Machines.**  
 American Tool & Machine Co., Boston.

**Drying Apparatus.**  
 American Process Co., New York.

**Drying Machines.**  
 Alton Machine Co., New York.  
 David Bridge & Co., Castleton, Manchester, Eng.  
 Joseph P. Devine, Buffalo, N. Y.  
 Birmingham Iron Foundry, Derby, Conn.  
 Textile-Finishing Machinery Co., Providence, R. I.

**Embossing Calenders.**  
 Textile-Finishing Machinery Co., Providence, R. I.

**Engines, Steam.**  
 Alton Machine Co., New York.  
 William R. Thropp, Trenton, N. J.  
 John E. Thropp & Sons Co., Trenton, N. J.

**Engraving Rolls.**  
 Hoggson & Pettis Mfg. Co., New Haven.

**Grinders and Mixers.**  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.  
 William R. Thropp, Trenton, N. J.

**Hangers.**  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Hose Machines.**  
 A. Adamson, Akron, O.  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 New England Butt Co., Providence, R. I.

**Hydraulic Accumulators.**  
 Birmingham Iron Foundry, Derby, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Insulating Machinery.**  
 Textile Machine Works, Reading, Pa.

**Iron Castings.**  
 Alton Machine Co., New York.

**Lasts (Rubber Shoe).**  
 Middlesex Last Co., Boston.

**Lathes—Hard Rubber.**  
 A. Adamson, Akron, O.

**Lathes—Jar Ring.**  
 A. Adamson, Akron, O.  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 William R. Thropp, Trenton, N. J.

**Machinists' Tools.**  
 Hoggson & Pettis Mfg. Co., New Haven.

**Moulds.**  
 A. Adamson, Akron, O.  
 Alton Machine Co., New York.  
 W. E. Arnold, Malden, Mass.  
 Barbour Bros., Trenton, N. J.  
 Birmingham Iron Foundry, Derby, Conn.  
 H. O. Canfield Co., Bridgeport, Conn.  
 Hoggson & Pettis Mfg. Co., New Haven.  
 Williams Foundry & Machine Co., Akron, Ohio.

**Pillow Blocks.**  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Presses (for Rubber Work).**  
 A. Adamson, Akron, O.  
 Alton Machine Co., New York.  
 Bay State Machine Co., Erie, Pa.  
 Birmingham Iron Foundry, Derby, Conn.  
 Boomer & Boschert Press Co., Syracuse, N. Y.  
 Edred W. Clark, Hartford, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.  
 William R. Thropp, Trenton, N. J.  
 Williams Foundry & Machine Co., Akron, Ohio.

**Pumps.**  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 Boomer & Boschert Press Co., Syracuse, N. Y.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.

**Racks for Boot and Shoe Cars.**  
 Hoggson & Pettis Mfg. Co., New Haven.

**Reducing Valves.**  
 Mason Regulator Co., Boston.

**Rollers (Hand).**  
 Hoggson & Pettis Mfg. Co., New Haven.

**Rubber Covering Machines.**  
 Alton Machine Co., New York.  
 New England Butt Co., Providence, R. I.

**Separators.**  
 Turner, Vaughan & Taylor Co., Cuyahoga Falls, O.

**Separators for Reclaimed Rubber.**  
 American Process Co., New York.

**Special Rubber Machinery.**  
 Alton Machine Co., New York.  
 Wellman Co., Medford, Mass.

**Spreaders.**  
 Alton Machine Co., New York.  
 American Tool & Machine Co., Boston.  
 Birmingham Iron Foundry, Derby, Conn.  
 New England Butt Co., Providence, R. I.

**Steam Traps and Specialties.**  
 Jenkins Bros., New York.  
 Mason Regulator Co., Boston.  
 Osgood Sayen, Philadelphia, Pa.

**Steel Stamps.**  
 Hoggson & Pettis Mfg. Co., New Haven.

**Stitchers (Hand).**  
 Hoggson & Pettis Mfg. Co., New Haven.

**Strip Covering Machines.**  
 Strip Cutters.

**Strip Cutters.**  
 Alton Machine Co., New York.  
 New England Butt Co., Providence, R. I.

**Tire Molds.**  
 Bay State Machine Co., Erie, Pa.  
 Williams Foundry & Machine Co., Akron, Ohio.

**Tubing Machines.**  
 A. Adamson, Akron, O.  
 Alton Machine Co., New York.  
 Bay State Machine Co., Erie, Pa.  
 Edred W. Clark, Hartford, Conn.  
 John Royle & Sons, Paterson, N. J.  
 Textile Machine Works, Reading, Pa.  
 Williams Foundry & Machine Co., Akron, Ohio.

**Vacuum Drying Chambers.**  
 Alton Machine Co., New York.  
 Joseph P. Devine Co., Buffalo, N. Y.  
 F. J. Stokes Machine Co., Philadelphia, Pa.

**Varnishing Machines.**  
 Birmingham Iron Foundry, Derby, Conn.

**Vulcanizers.**  
 Alton Machine Co., New York.  
 Biggs Boiler Works Co., Akron, O.  
 Birmingham Iron Foundry, Derby, Conn.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.  
 John E. Thropp's Sons Co., Trenton, N. J.  
 William R. Thropp, Trenton, N. J.

**Washers.**  
 Alton Machine Co., New York.  
 Birmingham Iron Foundry, Derby, Conn.  
 David Bridge & Co., Castleton, Manchester, Eng.  
 Continental Rubber Works, Erie, Pa.  
 Farrel Foundry & Mach. Co., Ansonia, Conn.  
 William R. Thropp, Trenton, N. J.  
 Turner, Vaughan & Taylor Co., Cuyahoga Falls, O.

**Wire Insulating Machines.**  
 Alton Machine Co., New York.  
 New England Butt Co., Providence, R. I.

**Wire Rope Machinery.**  
 Alton Machine Co., New York.

## SECOND-HAND MACHINERY.

Philip McGrory, Trenton, N. J.  
 M. Norton & Co., Charlestown, Mass.

## FACTORY SUPPLIES.

**Aluminum Flake.**  
 Aluminum Flake Co., Akron, O.

**Antimony, Sulphurets of.**  
 Golden.

**Actien-Ges. Georg Egestorf's Salzwärke.**  
 Linden, Germany.

**Atlas Chemical Co., Newtonville, Mass.**  
 Golden and Ormiston.

**Joseph Cantor, New York.**  
 Geo. F. Luthery, Jr., Elizabeth, N. J.



**MACHINERY AND SUPPLIES FOR RUBBER MILLS—Continued.****Antimony, Sulphurets of.—Continued.**

Golden and Crimmon.  
Wm. H. Scheel, New York.  
Stamford (Conn.) Rubber Supply Co.  
Typke & King, London, England.

**Balata.**

George A. Alden & Co., Boston.  
Raw Products Co., New York.

**Benzol.**

Samuel Cabot, Boston.

**Black Hypo.**

Joseph Cantor, New York.  
William H. Scheel, New York.  
Typke & King, London, England.

**Carbon Bisulphide.**

George W. Speaight, New York.

**Chemicals.**

Massachusetts Talc Co., Boston.  
Oxford Tripoli Co., New York.  
George W. Speaight, New York.  
S. P. Wetherill Co., Philadelphia, Pa.

**Colors.**

Joseph Cantor, New York.  
William H. Scheel, New York.  
Typke & King, London, England.  
S. P. Wetherill Co., Philadelphia, Pa.

**Crude Rubber.**

George A. Alden & Co., Boston.  
A. W. Brunn & Co., New York.  
Walker L. Gough & Co., New York.  
Hagermeyer & Brunn, New York.  
Adolph Hirsch & Co., New York.  
Livesey & Co., Ltd., New York.  
Raw Products Co., New York.  
Rubber Trading Co., New York-Boston.

**Dermatine.**

The Dermatine Co., London.

**Ducks and Drills (Cotton).**

J. H. Lane & Co., New York.

**Gilsonite.**

William H. Scheel, New York.

**Graphite.**

United States Graphite Co., Philadelphia.

**Graphite Grease.**

Joe. Dixon Crucible Co., Jersey City.

**Guayule Rubber.**

Continental Rubber Co.  
Ed. Maurer, New York.

**Gutta-Percha.**

George A. Alden & Co., Boston.  
Raw Products Co., New York.  
Rubber Trading Co., New York-Boston.

**Hydro-Carbon Products.**

Geo. A. Alden & Co., Boston.  
William H. Scheel, New York.  
Raven Mining Co., Chicago.

**Infusorial Earth.**

Stamford (Conn.) Rubber Supply Co.

**Kapak.**

Raven Mining Co., Chicago.

**Lampblack.**

Samuel Cabot, Boston.

**Lead—Blue.****Lead—Sublimed White.**

Picher Lead Co., Chicago, Ill.

**Lithopone.**

Gabriel & Schall, New York.

**Paris White and Whiting.**

H. F. Taintor Mfg. Co., New York.

**Mineral Rubber.**

Geo. A. Alden & Co., Boston.

Standard Asphalt & Rubber Co., Chicago.

**Reclaimed Rubber.**

Aladdin Rubber Co., Akron, O.

Alkali Rubber Co., Akron, O.  
F. H. Appleton & Son, Boston.  
Bloomington (N. J.) Soft Rubber Co.  
E. H. Clapp Rubber Co., Boston, Mass.  
Danversport Rubber Co., Boston.  
Derby Rubber Co., Derby, Conn.  
Eastern Rubber Co., New York.  
John Lang, London.  
Manufactured Rubber Co.  
New Jersey Rubber Co., Lambertville, N. J.

Pequanoc Rubber Co., Butler, N. J.  
Philadelphia Rubber Works, Philadelphia.  
Rickaby Rubber Mfg. Co., South Framingham, Mass.  
Robinson & Stiles, New York.  
Stockton Rubber Co., Stockton, N. J.  
Jos. Stokes Rubber Co., Trenton, N. J.  
S. & L. Rubber Co., Chester, Pa.  
Trenton (N. J.) Rubber Reclaiming Works.  
U. S. Rubber Reclaiming Works, N. Y.  
Westmoreland Rubber Mfg. Co., Grapeville, Pa.

**Agents and Dealers.**

Philip McGroarty, Trenton, N. J.  
H. P. Moorhouse, Paris, France.  
Rubber Trading Co., New York-Boston.  
Wm. Somerville's Sons, Liverpool.

**Scrap Rubber.**

L. Albert & Son, Trenton, N. J.  
Bers & Co., Philadelphia.  
M. Berzen & Co., New York.  
Wm. H. Cummings & Sons, New York.  
Green & Shonberg, New York.  
Gunnar Hirsch, Stockholm.  
Theodore Hofeller & Co., Buffalo, N. Y.  
A. W. Leslie & Co., Ltd., London, Eng.  
B. Loewenthal & Co., New York and Chicago.

J. Loewenthal & Sons, Chicago.  
Philip McGroarty, Trenton, N. J.  
Meyer Bros., Philadelphia, Pa.  
Albert A. Moers, New York.  
M. Norton & Co., Charlestown, Mass.  
San Giacomo Sons, Newark, N. J.

**Scrap Rubber.—Continued.**

J. Schurmann, London.  
Schwab & Co., Philadelphia.  
Trenton Gutta Percha & Rubber Separating Co., Trenton, N. J.  
Trenton Scrap Rubber Supply Co., Trenton, N. J.  
United States Waste Rubber Co., Brockton, Mass.  
M. J. Wolpert, Odessa, Russia.

**Substitute.**

T. C. Ashley, Boston.  
Joseph Cantor, New York.  
Carter, Bell Mfg. Co., New York.  
Geo. P. Luffery, Jr., Elizabeth, N. J.  
Massachusetts Chemical Co., Boston.  
The Rubber Chemical Co., Birmingham, England.  
C. P. Dos Santos, New York.  
Wm. H. Scheel, New York.  
Stamford (Conn.) Rubber Supply Co.  
Standard Asphalt & Rubber Co., Chicago, Ill.  
Typke & King, London, England.

**Sulphur.**

Battelle & Renwick, New York.  
T. & S. C. White Co., New York.

**Sulphur Chloride.**

William H. Scheel, New York.  
George W. Speaight, New York.  
Stamford (Conn.) Rubber Supply Co.

**Zinc Substitute.**

Aluminum Flake Co., Akron, O.

**Zinc Sulphide.**

Joseph Cantor, New York.  
Typke & King, London, England.

**Zinc White.**

New Jersey Zinc Co., New York.

**BUYERS' DIRECTORY FOR RUBBER TIRES AND ACCESSORIES.****Auto Top Fabrics.**

Hodgman Rubber Co., New York.  
National India Rubber Co., Bristol, R. I.

**Fabrics.**

Lane & Co., J. H., New York.  
National India Rubber Co., Bristol, R. I.

**Flanges and Rings.**

The A. Dewes Co., New York.

**Insulated Wires.**

National India Rubber Co., Bristol, R. I.

**Mats, Automobile.**

Boston Woven Hose & Rubber Co., Cambridge, Mass.  
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.  
Manhattan Rubber Mfg. Co., New York.  
National India Rubber Co., Bristol, R. I.  
Revere Rubber Co., Boston, Mass.

**Repair Stock.**

Trenton Rubber Mfg. Co., Trenton, N. J.  
Rims, Wheel.  
Goodrich Co., B. F., Akron, Ohio.

**Tires.**

Bailey & Co., C. J., Boston, Mass.  
Canadian Rubber Co., of Montreal, Ltd.  
Continental Caoutchouc Co., New York.  
Continental Rubber Works, Erie, Pa.  
Dunlop Tire & Rubber Goods Co., Toronto.  
Empire Rubber Mfg. Co., Trenton, N. J.  
Goodrich Co., B. F., Akron, Ohio.  
Gutta Percha & Rubber Mfg. Co., Toronto.  
Kokomo Rubber Co., Kokomo, Ind.  
Lake Shore Rubber Co., Erie, Pa.  
Milford Rubber Works, Milford, Ill.  
North British Rubber Co., Ltd., Edinburgh, Scotland.  
Pirelli & Co., Milan, Italy.  
Plymouth Rubber Co., Stoughton, Mass.  
Republic Rubber Co., Youngstown, Ohio.

**Tires.—Continued.**

Trenton Rubber Mfg. Co., Trenton, N. J.  
Victor Auto Tire Repair Co., Passaic, N. J.

**Automobile and Carriage.**

Acme Rubber Mfg. Co., Trenton, N. J.  
Boston Belting Co., Boston-New York.  
Revere Rubber Co., Boston-New York.

**Tire Fabrics.**

Lane & Co., J. H., New York.

**Tire Repairing.**

Voorhees Rubber Mfg. Co., Jersey City, N. J.

**Treads.**

Boston Woven Hose & Rubber Co., Cambridge, Mass.  
Manhattan Rubber Mfg. Co., New York.  
Revere Rubber Co., Boston, Mass.

**Valves, Tire.**

Schrader's Sons, Inc., A., New York.

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